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ORIGINAL ARTICLES.

ETIOLOGY OF PARESIS.[1]

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DEMENTIA paralytica, or paresis, has been recognized and studied for about one hundred years, but it is probable that only during the past fifty years has it received that sort of investigation which familiarity with the disease, accuracy of diagnosis and the accumulation of a sufficient number of cases for reliable statistical purposes would lead us to regard as of real scientific value.

A careful analysis of the histories of paretics during the last half-century has limited the assigned causes of the disease to a comparatively small number on which all observers are practically agreed, but with wide divergence as to the relative importance to be given to the several factors. These are syphilis (acquired), alcohol, mental stress and worry, heredity (including inherited syphilis), cerebral traumatism, sunstroke and lead-poisoning.

That a history of syphilis is present in a large number of patients is established, but it is doubtful whether we are yet in a position to subscribe to the dictum "No syphilis, no paresis." Krafft-Ebing has included another factor in his euphemistic and alliterative phrase "Civilization and syphilization." The statistics of different authors vary widely. Thus sixty-four observers found a history or marks of syphilis in paretics in percentages varying from 11 to 94 per cent., as collected by Peterson, Mott, Hirschl and others.

In the cases of paresis coming under my observation for the past ten years a percentage of 20 was found, but this is undoubtedly far too low, for there are many elements in hospital practice which tend to render it impossible to obtain reliable histories. For instance, many of our patients, because of their mental condition, are unable to give a history, whereas it might have been obtained earlier in the disease, before they had reached that state of mental aberration which led to their commitment to a hospital. Again, from the nature of the case, such a history is frequently not obtainable from friends, sometimes because they are honestly ignorant of the previous existence of a disease so usually concealed, while at other times, even when they are cognizant of it, from motives of pride or delicacy they persist in concealing the fact. Moreover, not a few of the patients come from walks of life many of whose members, through ignorance or inattention, do not recognize the infection or attach no importance to it. Or it may happen that they have dismissed it from their minds because they were told by some physician that they were cured. Finally, a large number of those that are too demented to give a history themselves have been depraved and wanderers so long that they have no friends who could enlighten us.

Taking all these factors into consideration, among them that in European countries (older than ours) the percentages seem higher, it is probable that at least 60 per cent. of paretics have suffered in former years from syphilis. When we consider that this is about ten times the percentage of syphilis in insanity generally considered, the coincidence is truly startling and we are forced to the conclusion that if not the direct cause lues is still a factor of such overwhelming preponderance as to occupy a most important relation to the disease. But, it has been urged, granting that from 60 to 70 per cent. of paretics have a specific history, there still remain 30 to 40 per cent. to be accounted for. There is undoubtedly a residue which must be assigned to other causes, but the foregoing statement has by no means the force that it might appear to have at first sight, inasmuch as it is found that, if one take one hundred patients with specific lesions on the skin—not paretics or mental cases—sometimes a history of lues is obtainable in a no larger percentage than in the same number of cases of paresis. Thus, one observer in London in a Lock hospital found that 80 per cent. or less of skin cases gave a specific history—where, as he knew, all were syphilitic—a percentage no higher than some have found in paresis. Hirschl, quoted by Krafft-Ebing, found (in the syphilitic ward of Prof. Lange in Vienna) that out of 63 cases of the late forms of syphilis a certain history of specific infection was obtainable in only 54 per cent. and a probable history in 9.5 per cent., whereas in 36.5 per cent., in spite of the existing evidence of lesions, no history was obtained. As compared with these figures another observer found among his paretics a luetic history undoubted in 56 per cent., probable in 25 per cent., and wanting in 19 per cent. respectively. In this series of investigations it will, therefore, be seen that the histories in the cases of skin syphilis fell short of those obtainable in paretics by 17.5 per cent. Furthermore, a series of experiments was attempted abroad which, it is needless to say, could not be carried out in this country, by which 9 undoubted cases of paresis with no obtainable history of syphilis were all inoculated with syphilitic virus and kept under careful observation. Not one of these developed syphilis. The most obvious inference from this is that, notwithstanding the absence of history, all had previously suffered from the disease and were therefore immune.

[1] Read before the Medical Society of the State of New York, at Albany, on January 28, 1902.

Dr. Mott has pointed out among certain other considerations worthy of notice (1) that in Iceland, where syphilis is unknown, paresis is never encountered, and that the only case ever seen was in a syphilitic foreign sailor. Against this, however, it should be recorded that in Egypt and Japan, where syphilis is very common, paresis is very rare, but here again is to be noted the fact that there are very little mental stress and overexertion in fatalistic Egypt and in Japan. In these countries, civilization, with its rush and hurry, is of comparatively recent development—of about twenty-five years perhaps—introducing a new factor which we will consider later. (2) The clergy, priests and Quakers, who are very rarely affected with syphilis, show a very great freedom from paresis.

In this connection Krafft-Ebing quotes from the Deggendorf asylum report that out of 1,090 patients there were 17 priests, not one of whom had paresis, whereas out of 15 soldiers 8 were paretics, a percentage of 61.5. He also says that Bouchaud, collecting statistics from France, records that of 288 priests admitted only 9, or 3 per cent., were cases of paresis. Krafft-Ebing himself reports that among 1,000 male paretics he found only one Catholic priest, and he had contracted syphilis while a student. Again, he says that in rural districts, where syphilis and mental stress are both less prominent, paresis is correspondingly rare, and that both correspondingly increase on approach to the great cities. In the canton of Wallis in Switzerland, where syphilis is extremely rare, the percentage of paretics to the total number of male admissions to the asylum is only 1.1 per cent.

Mendel showed that in 1876 the percentage of paretics in an asylum of the agricultural provinces of Schleswig-Holstein and Hanover amounted to only 4.56 per cent., whereas in the urban institution of Brandenburg and in Berlin the percentages were 19.7 and 26 respectively.

In the rural portions of Ireland, where syphilis is very rare, paresis is almost unknown, and the same is recorded by Hougberg as regards Finland. In one institution in each country the paretics constituted only 7.03 per cent. of the total number of admissions and as regards sex the proportion showed 11 men to 1 woman. Krafft-Ebing also quotes Hougberg as reporting that of 107 paretics admitted between 1875 and 1892 there was not a single man from the country, whereas city laborers afforded numerous instances. Arnaud, in the *Annales méd. psychol.* for 1888, wrote that in the large cities of France paresis was four times more frequent than in the country districts. Blaschko's Danish researches prove that the same proportion exists between the city and country in syphilis as in paresis; *viz.*, about 4 to 1.

Again, while syphilis affects all classes of men it is rare among the upper classes of women. Paresis is likewise found in all classes of men but rarely among the higher classes of women; furthermore, the relative frequency of syphilis in men and women is about the same as of paresis; *viz.*, about 4 to 1.

In Denmark, where an enumeration of those afflicted with venereal diseases is attempted, Blaschko states that the proportion of venereal diseases in men and women is 4.1 to 1, while Idanoff, collecting statistics regarding paresis, finds the proportion between the sexes to be 3.49 to 1.

I have not as yet spoken of the increase of the disease in modern times, but it is a striking fact that, whereas a few years ago juvenile paresis was a great rarity, whole series of cases are now available for study. Alzheimer, in connection with his series of young paretics, obtained in 91 per cent. a history of a foregoing syphilis—in the great majority hereditary. Fournier found 100 per cent. of his 37 cases syphilitic, the disease being mostly hereditary, more rarely acquired. Krafft-Ebing obtained a history of syphilis in 11 of his cases, while in 22 cases under Mott's observation 13 were surely syphilitic, in 4 syphilis could not be excluded, while in the remaining 4 there was a history of the disease in the mother. Thus with specific signs on the body 60 per cent., or combined with a maternal history 80 per cent., had hereditary syphilis. Now while we find (European statistics) that the proportion of paresis in adults is about 4 men to 1 woman, Mott noticed the striking fact that in his juvenile cases the sexes are about equal. This can only mean that while men have about 4 chances to 1 of acquiring syphilis, compared with women, children have equal chances of inheriting it—a fact which would tend to sustain Mott's conviction that syphilis was the all predominant factor. Direct heredity seemed to play but little part, for while three of the children had paretic fathers, two of those fathers had a history of early syphilis and had transmitted well-marked signs of that disease to their children, and it may well be inferred that their early lues had more to do with the development of paresis in their children than had their own dementia paralytica.

As regards heredity, however, it must be said that some observers give it a much greater prominence, not perhaps in the way of a direct transmission of the disease, but of the transmission of a neuropathic diathesis from any of the recognized forms of mental or nervous disease by providing a soil in which paresis may readily flourish. Paresis *per se*, so far as my experience goes, may justly be regarded as one of the least transmissible of mental diseases as compared with the functional psychoses which seem preeminently so.

Näcke, as quoted by Berkley, supports the view that an invalid brain is prone to develop paresis from acquired syphilis. Thus, in an investigation of 100 paretics he found 50 per cent. with certainty having a cerebral defect, and with probability in a greater number. He holds that a defective brain with acquired syphilis is most frequently the foundation for the development of paresis, and that without the defective brain the

specific infection would not have had this result. But it must be seen that the converse is also true —that without syphilis the defective brain would not have developed paresis, a position of view consonant with that of those who hold syphilis to be the prime cause, but giving greater prominence, it is true, to the inherited favorable conditions.

As to the transmission of the disease in any sense *per se*, it seems probable that the consensus of opinion that heredity plays only a minor part, in the present state of our knowledge, is a safe conclusion. In my experience the victims of paresis have not been feeble individuals, inheritors of disease, but are the active, the robust, the hale fellows, the free and generous livers.

Alcohol was formerly considered by French writers to be a very frequent cause of paresis. At present they have modified this view somewhat. Inebriety so often belongs to those who have syphilis; it is so often a feature in the lives of those undergoing great mental strain and anxiety; it is so often developed along with other irregularities by paretics in the first stage—an effect rather than cause—that it is difficult to assign to it a definite rôle. If no syphilitics were addicted to alcohol, and no alcoholics had syphilis, it would be an easy matter to determine which class furnished the paretics, but Venus and Bacchus have ever gone hand in hand and to differentiate is difficult. Dr. Mickle, fifteen years ago, regarded alcohol as a cause in as high a percentage as 23.5 in men—but at the present time I feel sure it would not be accorded so prominent a part. Alcoholism produces disastrous results in human brains, it is true, but these results seem to be *sui generis* and somewhat distinctive—a false rather than a true paresis. That it is a factor and an adjunct, however, to other causes is most probable; that by itself it is efficient in a moderate number of cases seems quite possible; that it is an active aid to syphilis is most probable; that it is a not infrequent accompaniment is undoubted. Many specific cases, however, give no history of alcohol.

Injuries to the head are assigned in a small number of cases. In some there seems to be possibly no other element and I am not prepared to deny that a severe cerebral injury may in itself be sufficient to cause the disease, although I am free to say that in the greater number of instances under my own personal observation in which cerebral injury is said to have been the sole cause by diligent inquiry I have been able to find in almost every case a history of preceding syphilis. The paresis has sometimes developed so soon after the injury as to make the relatives sure that it was the sole cause, but with a latent specific history in almost all these cases I am inclined to think that trauma is simply the ripening element, bringing to the surface that which was ready to appear at any time. I am rather of the opinion that many of these cases would never have developed paresis from the blow, had it not been for the antecedent syphilis. Of the etiological significance of poisoning by lead, tobacco, etc., it can only be said that such effects must be put down as problematical. There is a small percentage of cases in which one or other of these have been held responsible in the absence of any other apparent cause. It is fair to say that while the influence of such poisons might be sufficient, the number of cases depending upon them is too small to constitute them important factors.

I have so far omitted any extended consideration of mental overstrain, worry, anxiety, but these seem to supply a somewhat essential element. Paresis has been called "the disease of the nineteenth century." It seems hard to believe that, with syphilis existing for thousands of years, paresis should not have been recognized in earlier centuries, had it existed, by those good observers in medicine who always have been found, no matter what their times or enlightenment. If syphilis has been the sole cause, paresis must have prevailed earlier and, if so, it must have been recognized and mentioned in the literature. If we take the other alternative and conclude that it did not exist to any such extent as it does now, we must see what distinguishes the nineteenth century from those that have preceded it.

The great contrast, it seems to me, lies in what must be termed "civilization." An era of inventions, of electricity, of rapid means of communication, and of business competition, has called forth more and more mental exertion and struggle. This is a very trite remark and the point would not be referred to had it not a special bearing here. The increase of paresis with the progress of the century has been something remarkable, if we are to believe European authorities. Thus, in Deggendorf, a Bavarian institution, the number of paretics, which from 1869 to 1874 had amounted to 9.3 per cent. of men and 5.2 per cent. of women, showed in the years from 1885 to 1890 an increase to 23.2 per cent. of men and 9.3 per cent. of women. At Eichburg the number of paretics has been almost doubled. In some of the cities, particularly Berlin and Munich, still more remarkable percentages of increase have been noted. In this country, however, I have not been able to find such a rapid increase as Continental figures would indicate for Europe.

The great and increasing mental anxiety and overexertion of this century seem, then, to offer the principal contrast with those which have preceded, and it seems fair to assume that these, combined with syphilis, may supply the exciting cause in the largest proportion of cases. Egypt has but little mental stress, worry or anxiety; it is a country of fatalism; whatever is, is accepted; there are lacking the mental rush and overexertion of Western Europe and America, and it is precisely in Western Europe and in America that paresis is most largely found.

As regards the subject of tabes, Sachs, quoted by Peterson, says, "The very frequent develop-

ment of tabes after dementia paralytica and of dementia paralytica after tabes proves the close relationship between the two diseases; and, since tabes is beyond doubt a form of syphilitic disease, there is sufficient ground for thinking that dementia paralytica has the same etiological imprint." To this objection is made that if the relationship be so close there should be a closer approximation as regards the percentages of specific histories obtainable in the two diseases. Thus, in tabes we find a history of syphilitic infection in 80 to 90 per cent. of the cases, whereas in paresis it is somewhat less frequent—in 60 per cent. on an average, for we have found the percentages varying from 11 to 90 per cent., according to the experience of the observers, the nationality of the patients, their social condition, and locality of residence.

This lack of approximation may be partly accounted for by the fact that the mental condition of tabetics often enables them to give a clear history of syphilis, which it is impossible to obtain in the mentally-obscured paretic. Furthermore, while the two diseases without doubt often develop one into the other, after all, according to my experience, the incidence of the two is not so frequent or so striking as to make the problem an insistent one for solution. When we consider that the brain is affected in one case and in the other the cord—different parts of one system it is true, but different nevertheless—and that other considerations may affect the possibility of accurate histories in paretics, we may feel that the cases are not exactly parallel and that the arguments on either side are somewhat inconclusive.

Again, it is urged that if paresis were the result of syphilis we should obtain the same beneficial effects from antispecific remedies in paresis that we get in ordinary brain syphilis. This apparently is a very strong argument against the theory of a specific origin, and its consideration would lead us into the domain of pathology, a topic reserved for another paper and for a pathologist. It may be said, however, if Mott's contention be true, that in paresis it is the neuron that is attacked, whereas in ordinary brain syphilis it is the meninges, especially of the base, and the arteries, with the formation of gummata, etc., we may have here the true explanation, for the neurons, as he demonstrates, are incapable of regeneration—according to the dictum of Virchow, who says: "A cell nourishes itself and is not nourished"—while the structures concerned in ordinary brain syphilis can be affected by treatment. In other words, according to Mott, it is simply a question of what structure is involved in the disease process and not a question of the identity of the cause that determines the effect of treatment. This brings to mind the query of Allan McLane Hamilton who asks, "Are there any varying toxins in syphilis, some more active, which attack the skin and mucous membrane, and the like, and show immediate effects, and another toxin which has as yet eluded us, which lies dormant for many years until it finally shows itself in disease either of the brain or of the spinal cord?"

But whether syphilis acts directly as a cause of cerebral changes, producing what we call paresis, or indirectly by lowering vitality, preparing the way or predisposing, the result is practically the same, and we must admit that in one way or the other it is the most potent cause of paresis, but that there are other causes which must be recognized as acting as adjuncts.

It seems justifiable in the present state of our knowledge to conclude as follows:

(1) Syphilis is the most common factor in the production of paresis.

(2) It may cause it directly—an exciting cause.

(3) It may cause it indirectly by bringing about such a devitalization of the system generally as to render other influences operative—a predisposing cause.

(4) It is not usually the sole cause, but there is associated with it the deleterious effect of mental stress and overexcitement, dissipation and alcoholism, and heredity.

(5) In a certain relatively small number of cases mental stress, worry or overwork may be the sole ascertainable cause.

(6) Traumatism may also be the cause in a still smaller proportion of cases, but in many of them it acts as a developing or ripening agent of an incipient paresis in a syphilitic subject.

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THE COMPARATIVE FREQUENCY OF GENERAL PARESIS.[1]

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As part of the symposium on paresis I have been requested to present some statistics bearing upon the occurrence of this disease generally and its frequency in the professions. Accordingly I have gathered the following data from such sources as I have found accessible.

Examination of the literature of paresis discloses that it has been recognized for a period of about eighty years, although claims are made that some cases were reported before the close of the eighteenth century. As early as 1815, Esquirol appears to have noted the fatal ending of paralysis and failure of speech in certain cases of insanity, but his writings do not indicate that he ever had a clear idea of general paresis as a distinct form of disease. One of his students, however, Georget, described it in 1820 under the name of chronic muscular paralysis. Delaye in 1824 called it "incomplete general paralysis," a name which has since been retained as one of those commonly in use. Calmeil published a

[1] Read before the State Medical Society, at Albany, N. Y., January 28, 1902.

complete description of the physical symptoms and anatomical lesions in general paresis in 1826, but all of these writers and many others about this period appear to have regarded the malady as a special form of paralysis superimposed upon insanity—a complication of an already-existing mental disorder rather than a distinct form. In 1839, Dr. W. A. F. Browne, Commissioner in Lunacy for Scotland, observed cases in that country, but it was not until 1843 that general paresis was recognized in America. In that year Dr. Luther Bell of the McLean Asylum, now presided over by Dr. Edward Cowles, detected this disease in a number of patients, all of whom died within a comparatively short time.

Dr. Bell, in his annual report for 1843, stated that prior to 1840 he had never met with an instance of paresis in this country, although he had seen many cases abroad and had made diligent search for them in his own asylum and elsewhere on this side of the Atlantic. He says: "I have regarded it as a somewhat curious fact that it is only within the last few years that this disease has been admitted into this institution. As late as my visit to Europe in 1840, it was unknown within our walls, nor, after seeing it there, can I recall any case in our register which would at all meet its characteristics, rendering it certain that it was not overlooked."

Four years later Dr. Pliny Earle reported several cases at the Bloomingdale Asylum in New York City, and about the same time Dr. Amariah Brigham, of the New York State Lunatic Asylum at Utica, is said to have had similar cases. I find, however, in Dr. Brigham's annual asylum reports only meager references to general paralysis. In the years 1844 to 1847 he mentions, among the causes of death, paralysis in one or two cases each year. In 1848, the last year of his life, his report shows that five patients died of general paralysis, but in none of his reports does he publish a table showing the forms of insanity in the cases admitted, nor does he discuss the symptoms of the cases mentioned as terminating in death by general paralysis.

The first table of this kind published in the history of the institution at Utica, showing the forms of insanity admitted, is found in the report of Dr. N. D. Benedict for the twelve months ending November 30, 1850, the year following that in which he succeeded Dr. Brigham as superintendent of that institution. His report shows that two cases of general paralysis were admitted during that year and that there had been one remaining in the hospital at the close of the previous year. A few years later, Dr. Ranney of the City Asylum on Blackwell's Island reported several cases as occurring in that institution. In 1866 Dr. John P. Gray, who had succeeded Dr. Benedict at Utica, read a paper before this society in which he gave an exhaustive review of several cases selected from a total of 119 that he had had under his personal observation.

Beginning with the year 1849, when the admission of the first case was recorded at the Utica Asylum, the reports of that institution show only a gradual increase in the number of general paretics admitted during the next ten years. The average number of patients of all kinds received annually into the institution during the period mentioned was 329, while the average number of paretics was 5 or 1.5 per cent. The next decade, with an average annual admission of 351 patients, shows an increase in the number of cases received at the asylum, but a much more rapid increase in the number of general paretics that were annually brought there. The average annual admission of this class for the ten years was 15, or 4.3 per cent., but for the latter half of the decade the percentage was slightly above 5 per cent. This decade covered the Civil War and the four years immediately following. The query naturally arises as to the influence of that period of storm and stress as a causative factor in the production of insanity generally and especially paresis. From 1870 to 1880 the average number of patients received annually at Utica was 434, whereas the average number of paretics received was 21 or about 5 per cent. During the next ten years, from 1880 to 1890, the average number of patients annually admitted was 418 and the average number of paretics was 29, or 7 per cent. For the last decade of the century, that is from 1890 to 1900, the average number of patients received annually was 327 and the average number of paretics was 13, or 4 per cent.

During the fifty years comprising the last half of the nineteenth century there were received at Utica 18,843 insane persons of whom 865 were cases of general paresis, the average percentage being, therefore, 4.5 per cent. The proportion of women to men was 1 to 7.5.

The Hudson River State Hospital was opened in 1871. During the first decade of its existence there were received 1,671 patients, of whom 130 were paretics—7.75 per cent. During the second decade 3,208 patients were received, of whom 144 or 4.4 per cent. were cases of paresis. During the third decade the total number received was 5,735, of whom 361, or 6.3 per cent., were paretics. The total number of patients received in 30 years was 10,434, while the total number of cases of paresis was 672 or 6.4 per cent. Of these patients 75 were women and 597 were men—a proportion of 1 to 8.

From September 30, 1881, to October 1, 1901, there were admitted into the Buffalo State Hospital 8,243 patients. Of this number 391, or 4.74 per cent. were paretics, of whom 65 were women and 332 were men—a proportion of 1 to 5.

The total number of patients received into the St. Lawrence State Hospital from December 9, 1890, when it was opened, to September 30, 1901, was 4,286. The number of cases of general paresis received during the same period was 208, or 4.8 per cent.

There were admitted to the Rochester State Hospital from the date of opening in July, 1891, to September 30, 1901, 1,183 patients, of whom 105, or 5.6 per cent., were general paretics.

At the Middletown State Homeopathic Hospital the number of patients admitted from the date of opening in 1874 to September 30, 1901, was 5,892; of these 292, or 4.9 per cent., were general paretics.

At the Binghamton State Hospital there were admitted on original commitments between October 1, 1890, and September 30, 1901, 2,226 patients; of these 111, or 4.9 per cent., were cases of general paresis—19 being women and 92 men, a proportion of about 1 to 5.

From Dr. A. E. Macdonald, Superintendent of the Manhattan State Hospital, East, I learn that during the last thirty years about 18,000 insane men have been received into that institution under both county and State care. Of this number 16 per cent. have been cases of general paresis and the annual admission rate has been nearly constant for several years past.

Although I have not the exact figures showing the number of women admitted to the female department of the Manhattan State Hospital, the reports of the State Commission in Lunacy indicate that it has not differed materially from the number of men received. If, therefore, due allowance be made for the number of paretics that were received among the female cases, we should probably find that the percentage of paretics in the total number of cases of insanity received was somewhat above 9 per cent.

The total number of patients received into the Long Island State Hospital at Flatbush from 1896 to September 30, 1901, was 2,141. The number of cases of general paresis admitted during the same period was 250, or 11.5 per cent. Of these paretics 27 were women and 223 were men—a proportion of 1 to 8.

At the Bloomingdale Asylum, White Plains, N. Y.—practically a private institution—there were received during the ten years ending September 30, 1901, 1,230 patients. Of this number 180 men and 25 women, or 16.6 per cent., were suffering from general paresis, the proportion being 1 woman to 7 men.

During the last thirteen years—the period covered by the reports of the State Commission in Lunacy—it appears that there have been received in all the State hospitals of New York a grand total of 49,787 patients. Of these 3,307—a percentage of 6.6—have been cases of general paresis. This, however, is somewhat lower than the actual percentage of cases received, for the reason that, under the operation of the State Care Law, the State Commission in Lunacy has from time to time transferred large numbers of patients from one hospital to another and these transfers have materially swelled the apparent number of admissions as shown by the reports of the Commission, whereas the number of cases of paretics has not been similarly affected by these transfers.

The following table shows the total annual admissions, the number of paretics received and their percentage in the State hospital system of New York during the last thirteen years:

Year.	Admissions.	Paretics.	Percentage.
1889	1,813	98	5.4
1890	1,942	66	3.4
1891	2,868	80	2.7
1892	2,627	114	4.3
1893	2,704	132	4.8
1894	4,003	152	3.7
1895	3,003	161	5.3
1896	5,615	399	7.1
1897	4,649	423	9.0
1898	5,542	448	8.0
1899	5,243	414	7.8
1900	4,862	396	8.0
1901	4,916	424	8.6
	49,787	3,307	6.6

In the *Journal of Mental Science* for July, 1900, Dr. Arthur E. Patterson, senior assistant medical officer of the City of London Asylum at Dartford, analyzes 1,000 admissions; of whom 620 were men. Of the latter 76, or 12 per cent., were general paretics, whereas of the 380 women 8, or not quite 3 per cent., were cases of general paralysis. The proportion of men to women suffering from this disease was 6 to 1. Of the men 43 were married, 30 were single, 1 was a widower, and in 2 instances the condition as to marriage was unknown. Of the women 4 were married, 3 were widowed and 1 was single. It would thus appear that the disease is met with more frequently in the married than in the single.

Only 2 of the men were under thirty years of age, 34 were between thirty and forty, and 30 were between forty and fifty, whilst 10 were between fifty and sixty. These figures show that no less than 64 out of the total 76 men were between the ages of thirty and fifty, whereas all of the women were between thirty and forty.

A recent report of the medical superintendent of the Cane Hill Asylum in the county of London shows that of 402 patients admitted during twelve months 42 suffered from paresis, 38 of whom were men and 4 were women. Paretics, therefore, formed 10.4 per cent. of the admissions, the proportion of women to men being 1 to 9.

At the Claybury Asylum in the same county for a similar period there were admitted 820 cases of insanity. Of these 87 were paretics, 71 being men and 16 women. Paretics, therefore, formed 10 per cent. of the total admissions, and the proportion of women to men was 1 to 4.5. Of the men received 18 per cent. were cases of paresis.

At Hanwell Asylum the year's admissions numbered 534. Of the men 19 per cent. were paretics and of the women 5 per cent.

Occupation.—Of 1,300 cases of paresis recorded at the Manhattan State Hospital, East, only 8 were actors while 7 were lawyers and 5 were physicians—the clergy not being represented. It would appear that while no particular profession, trade, business or occupation especially predisposes the individual to an attack of general paresis, every walk of life is represented. Among the cases under consideration were 109 ordinary laborers, 59 clerks, 45 tailors, 37 drivers, 35 bartenders, 32 painters, 32 cigarmakers, 31 carpenters, 29 salesmen, 28 shoemakers, 26 waitresses, 23 merchants, 20 machin-

ists, 16 printers, 16 butchers, 17 bakers, 16 barbers, 16 engineers, 16 peddlers, 14 cooks, 13 musicians, 13 porters, 12 blacksmiths, and so on through more than 200 different occupations.

Among 672 paretics at the Hudson River State Hospital were 10 engineers, 6 lawyers, 4 military or naval officers, 3 physicians, 2 authors.

Out of 208 at the St. Lawrence State Hospital there were 2 physicians, 35 laborers, 14 farmers, 6 commercial travelers, 11 railway employees, and 20 housewives.

Among 120 cases at the Rochester State Hospital were 3 lawyers, 6 shoemakers, 5 merchants, 5 farmers, 8 laborers, and 6 painters.

In 239 cases at the Buffalo State Hospital there were 4 physicians, 3 lawyers, 2 clergymen, 1 editor, 2 actors, 2 artists, and 2 musicians.

At Flatbush among 250 cases there were 6 druggists, 3 musicians, 1 physician, 1 veterinary surgeon, 1 artist, and 1 dentist.

At the Bloomingdale Asylum, among 180 men admitted, there were 9 lawyers, 5 physicians, 4 actors, 4 theatrical managers, 2 musicians, 1 teacher, 28 merchants, 27 clerks, 8 manufacturers, 8 brokers, 6 saloonkeepers, 4 police officers, and 2 civil engineers.

In all of the institutions except Bloomingdale the laboring classes are largely represented.

Duration.—To Dr. Louis C. Pettit, second assistant physician at the Manhattan State Hospital, East, I am indebted for valuable data regarding the duration of the disease, collected by him from the wards and records of that institution. Thirteen hundred patients observed lived after admission an average period of eleven months each, the disease showing an average duration prior to admission of fifteen and three-fourths months. The total average duration of these cases was, therefore, a little more than two years. Thirty-two nations and over 250 occupations were represented in this death-roll from general paresis. Of these paretics there were 484 of American birth, 335 Germans, 244 Irish, 71 English, 31 French, while the remaining 135 were about evenly distributed through 20 other nationalities, among them being two Chinamen. These figures show a remarkable preponderance of native Americans suffering from general paresis in an institution where more than two-thirds of the inmates were of foreign birth and over 80 per cent. of foreign parentage.

Dr. Pettit gives an interesting table which tends to show that general paresis rarely occurs before the twentieth year or after the age of sixty. In the 1,300 cases tabulated death occurred as follows:

Age at death.	Cases.
20 to 25 years	4
25 to 30 "	72
30 to 35 "	173
35 to 40 "	250
40 to 45 "	272
45 to 50 "	212
50 to 55 "	152
55 to 60 "	89
60 to 65 "	53
65 to 70 "	20
70 to 75 "	2
75 to 80 "	1
	1,300

Dr. Asher of the Dalldorf Asylum, Berlin, reports in the *Allgemeine Zeitschrift für Psychiatrie*, Vol. XLVI., No. 1, that of 643 cases of general paresis in men treated in that institution two-thirds were between the ages of thirty-five and fifty. The average duration of life after admission was fourteen and one-half months and only 16.8 per cent. lived two years after admission.

In 305 cases in which the date at which the symptoms first attracted attention was ascertained, the average duration was twenty-six months. The progress of the disease seemed to be more rapid in the younger subjects. Between the ages of twenty and thirty-five the average duration of institution life was thirteen and one-half months; between thirty-five and fifty, fourteen and one-half months, and between fifty and seventy, fifteen months.

Dr. Asher found a definite hereditary predisposition in 33 per cent. and syphilitic infection in 35 per cent. Alcoholic intemperance was alleged in 37.6 per cent. and injury to the head in 9 per cent. of the cases.

The *American Journal of Insanity* for January, 1896, contains a report showing that of 200 male cases of paresis in Krafft-Ebing's clinic in Vienna 56 per cent. were certainly syphilitic, 25 per cent. probably so, while in 19 per cent. the data were insufficient to warrant a conclusion of probable syphilis.

In all the records of paresis studied in preparing this paper I have found but a single instance of alleged recovery from the disease.

From this brief survey of the statistics of general paresis it would appear that it forms about 8.75 per cent. of all cases of insanity; that it occurs most frequently between the ages of thirty and fifty; that it is gradually increasing in frequency at the present time; that men are about seven times as liable to the disease as women; that it is invariably fatal in its termination and usually so in less than two and a half years. Furthermore, that it is nearly twice as frequent in large cities as in the country and that heredity, syphilitic infection, and alcoholic indulgence are important factors in its production. That neither the members of the learned profession, teachers, students, musicians, nor actors, appear to be especially susceptible, nor does intellectual work or any other special kind of occupation seem to predispose the individual to paresis, but that general cerebral strain with more or less hereditary influence is found to have existed in the majority of cases. Overwork, sexual excesses, alcoholism, irregular habits of sleeping and eating and such accidents as sunstroke and cerebral traumatism appear to be the great factors in the production of this disease.

Home for Aged Jews.—It is said that Mrs. Morris Rosenbaum has donated $25,000 to the Home for Aged Jews. This money will be spent in erecting a fireproof hospital, 40 by 60, which will be fitted out by the daughter of Mrs. Rosenbaum.

THE EARLY DIAGNOSIS OF PARESIS.[1]

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IT is with much hesitation that I attempt to discuss so difficult a subject as the early recognition of paresis, for here we are confronted with borderland conditions and overlapping states. I know of no subject which is so important and no subject concerning which error is more frequently made both on account of the gradual invasion and also because of the generalized character of the symptoms. The recognition of the disease in its early stage is especially difficult because, in the average case, general disturbances for a long time precede the appearance of special symptoms indicative of organic change. In cases in which a satisfactory and detailed history of the very early period can be obtained, we usually receive an account of general ill-health, an ill-health evidenced by complaints on the part of the patient, as well as by the observations of his friends. As a rule, we find that the patient has not been well for some time—usually months. If, during this preliminary period of ill-health, the patient visit his physician, the case is not infrequently mistaken for one of neurasthenia, and yet, when the symptoms presented are closely analyzed, it is found that they resemble those of neurasthenia only superficially. It is true we have quite commonly the symptom of ready fatigue and in addition inability to maintain the attention for any length of time upon affairs of business or other every-day matters. Notwithstanding, the typical fatigue syndrome of neurasthenia is wanting, as an analysis of the early symptoms will show. The friends of the patient often maintain that his appearance and manner have changed, that he no longer attends to his business as carefully or no longer does his work as well as formerly. He may look somewhat tired or perhaps a little sleepy. At times he is pale and at times, again, his face may be unusually flushed; it often lacks its former vigor of expression. His attitude, his movements, his walk may suggest general loss of tone. Sometimes he is troubled with various vague distressing sensations about the head, such as fulness, pressure or constriction, or again he may complain of ringing in the ears, sparks before the eyes, and muscæ volitantes. Attacks of giddiness and vertigo may also occur and some patients suffer from a dazed or stunned feeling in the head. Occasionally there are rheumatoid pains referred to the arms, legs, and to the back of the neck or trunk. More often, when pain is present, it assumes a distinctly tabetic character, is lightning-like and darting, or now and then may suggest neuralgia. Pain in the head of great severity and simulating migraine is not very infrequent. At times the headache is referred to the supraorbital and adjacent regions and especially to the eyeball of one side, the attack then suggesting ophthalmic migraine.

In the neurasthenic patient, the symptoms are almost exclusively subjective. He begins by describing to us how he feels, and complains actively of various symptoms. He tells us that he is nervous, is easily excited and upset, that he gets very tired at his work, that his head aches, his heart palpitates, that he has indigestion, that his bowels are constipated. He complains of various diffuse aches or pains which suggest the sensations of simple or exaggerated fatigue. He suffers from occipital headache, from backache, from aching in the limbs and perhaps tenderness over the spine. He presents also quite characteristic signs of atony of digestion or of gastric catarrh and constipation; and very commonly with a history of palpitation of the heart is associated that of coldness and dampness of the extremities.

While there are some superficial resemblances between the symptoms which he details and those found in the early beginning of paresis, we cannot but note certain striking differences. First, the patient in the early beginning of paresis, if he appear before the physician at all, is generally brought by friends or relatives. Rarely does he come of his own initiative. Secondly, it is the friends or relatives who detail the symptoms. They give an account of changes which they have noted in the patient and of which he himself may not be cognizant or to which he has paid no attention. The signs of ill-health are first observed by those about him, not by the patient himself, who, as a rule, does not actively complain, unless there be present tabetic or neuralgic pains or attacks of the migraine-like headache. His conduct is in marked contrast to that of the neurasthenic patient, who not only seeks the physician's advice himself, but also has at his tongue's end a long list of complaints with which we are all very familiar. Further, the physical appearance of the neurasthenic is rarely changed, or, in any case, is not altered in the same manner as is the appearance of the paretic. He may be pale, perhaps, or a trifle thin, but certainly he is not somnolent and his features lack none of their accustomed force. Often the anxiety with regard to his condition causes an accentuation of the facial lines; certainly never an effacement of folds and wrinkles; his face may have an anxious or a worried look, but there is no change of quality in its expression. It is still the same face to friends or relatives. It has not become altered so as to suggest that the patient is a changed man. The friends are never the ones to discover first that the patient is ill, and, indeed, frequently listen to his complaints with impatience and incredulity. No one has noted marked change either in his appearance or in his manner. Least of all does anyone tell us that the patient attends to his business less carefully or less well than formerly. Further, when we analyze the symptoms which are detailed by the neurasthenic, we find that they

[1] Read before the Medical Society of the State of New York, at Albany, January 28, 1902.

are those of chronic fatigue, of occipital headache, of backache, of limbache. There is no account of darting or lightning-like pains. The headache is quite characteristic and there is no occurrence of one or two attacks of terrible neuralgia or migraine-like headache so often met with in the early paretic. Again, the motor phenomena of neurasthenia are those of simple weakness and ready fatigue. There is never a loss of precision in movement, never a loss of accuracy of coordination. It is not observed, for instance, in the neurasthenic mechanic that his work is done less accurately or in the neurasthenic clerk or bookkeeper that his hand-writing is changed. In the mechanic in the early stage of paresis, inaccuracy and change in the quality of his work are among the first symptoms observed. Further, the deterioration is observed not by himself, but by those about him.

The sleep disturbances of neurasthenia are radically different from those of paresis. The neurasthenic on going to bed as a rule falls asleep readily, but is disturbed at intervals during the night or awakens early in the morning and leaves his bed in an exhausted and depressed condition. After he has taken food, and as the day progresses, his condition steadily improves until the evening, when he is in a relatively good condition. By this time his fatigue symptoms have largely disappeared and many a neurasthenic patient in the evening is in such good condition that he himself will declare that he is no longer ill. In paresis, in the early stage, the opposite condition, as a rule, obtains. Though the patient may suffer from insomnia, dreams or disturbed sleep, he is usually at his best in the morning, but as the day progresses becomes more and more drowsy until toward evening somnolence may be very marked. Vague and suggestive symptoms, absent in the morning, may be present in the evening and be so pronounced as to attract the attention of those about him. The speech which may have been clear in the morning, may be distinctly thick and blurred in the evening. The face, which has had a relatively normal expression in the morning, may be dull and heavy in the evening; the gait and gestures may be cumbrous and awkward. Slight disarrangement of the clothing, indifference to the niceties and proprieties, unwonted profanity, coarseness and irritability may also be noted at this time.

The neurasthenic is not only at his best in the evening, but qualitative mental changes are at no time present; in the paretic, on the other hand, qualitative mental changes, although possibly in only very slight degree, are noticeable almost at the outset. The mental phenomena of the neurasthenic are essentially quantitative. We have first a marked and characteristic symptom in the diminution of the capacity for intellectual effort. The attempt to do mental work sooner or later brings on symptoms of exhaustion. The task may be properly begun, but soon the patient experiences difficulty in keeping the attention upon it and if the attempt be persisted in painful sensations about the head arise, such as a feeling of constriction, headache and giddiness. This difficulty of concentrating the attention may lead to an attitude of distraction and inattention. Mental fatigue is also evidenced by a number of other symptoms. Ideas do not present themselves so readily or in the same rapid succession as in health. There is a distinct decrease in the spontaneity of thought and this the patient himself well recognizes, often saying, "I cannot think." There may also be more or less marked irritability. Trifling occurrences sometimes provoke to anger, just as other inadequate causes, *e. g.*, a play at the theatre or a newspaper account of a murder, may excite the patient to laughter or to tears. Together with these symptoms we find that our patient is also introspective. He suffers from a distinct nosophobia. His indigestion suggests to him that he has a serious organic disease of the stomach; his palpitation leads him to fear that he has serious disease of the heart. The patient so afflicted not infrequently comes to the physician with the statement that he is afraid he is "going out of his mind," that "he is losing his memory." Indeed, "loss of memory" is one of the most common phrases used by the neurasthenic. How incorrect this expression is, every one of my auditors can testify, for the neurasthenic patient will give a most circumstantial history of his case, not omitting even unimportant details, and will in other ways render it clear that there is no actual impairment of memory. Neither is there at any time any inability to understand properly or to reason correctly about ordinary matters. We are at once convinced that there is no qualitative mental change whatever.

The mental condition of the paretic presents in this respect a more or less marked contrast. In the early period of his disease he too becomes readily fatigued; he cannot do his work without an unusual effort and it soon becomes distasteful to him. There is added, however, to this symptom of ready fatigue, a distinct feebleness both in the ability to apprehend and in the ability to remember. Unusual forgetfulness is especially observed as regards the smaller details of life. Distinct and undoubted impairment of memory is one of the first symptoms. The patient's work becomes changed in quality not only because of slight impairment of coordination of movement, but also because the patient forgets how to do it. In addition there are sooner or later those slight but constantly recurring changes in habit and lapses in conduct which are so characteristic in paresis. These are all qualitative in character and are indicative of a fundamental alteration in the mental make-up of the individual; the forgetfulness, manifested in neglect of the attire, in neglect of business, in infractions of a long accustomed daily routine, unseemly behavior at the table when eating, gradual obtusion to the proprieties of conduct, all have but one meaning. This dulling of the sensibilities is further made evident by the slight im-

pression which important events, such as a business transaction of consequence, the illness of a near relative or the death of a friend, make upon the patient. A tendency to repetition in conversation, the introduction of irrelevant matter and an occasional obscene or profane expression on the part of a man previously precise and careful in his language, are but shadows of events to come. In the neurasthenic, it is unnecessary to point out, such changes as these never occur; the sense of propriety, the sense of duty, the sense of the esthetic, never become blunted. There is none of that loss of interest in the family, none of that lack of affection for relatives and friends, none of the gross indifference of the paretic. If the neurasthenic cannot follow his daily vocation because of his ill-health, he is worried and distressed. He manifests no indifference to business, and least of all are there found errors or confusion in his acounts. There is none of the gradual rise to the surface of the coarser animal qualities, none of the excessive eating and drinking, none of the beginning indulgence in alcohol or unwonted sexual gratification, no diminution in the nicety and refinement of speech, none of the coarseness and vulgarity seen in the early paretic. No history is elicited of undue familiarity or improper jests with ladies, female servants or others.

In the paretic the mental changes are far more than those of mere weakness, while in the neurasthenic they are simply and solely those of fatigue. Even when distinct psychopathic factors make their appearance in neurasthenia, they never in the least resemble those of paresis. We need only mention the special fears, the various phobias and obsessions to prove the truth of this assertion.

To my mind the difficulty of the distinction between neurasthenia and the very early stage of paresis is largely due to the loose conception of neurasthenia that prevails. The conception of neurasthenia should be strictly limited to that of the fatigue neurosis; the term neurasthenia should not be applied to any other condition, and to say that a paretic passes through a period of neurasthenia in the early stage of his paresis, is to make a gross misuse of terms. We must separate neurasthenia from certain other morbid states which, while they superficially resemble it, differ from it radically. Among these are especially the nervous conditions which belong to the larvated, undeveloped or prodromal periods of the insanities. The various symptoms of nervous weakness and other nervous manifestations by which such affections are attended bear no relation whatever to those of neurasthenia. They only superficially resemble the latter and they should be characterized not as neurasthenic, but as neurasthenoid. The term neurasthenic should be applied only to the symptoms of neurasthenia and not to those of other and widely differing affections, and what is true here of the relation of neurasthenia to paresis is also true of neurasthenia in relation to melancholia and other mental affections. It is just as incorrect to say that a patient has passed through a neurasthenia, which has deepened into a melancholia, as it is to say that a patient has passed through a neurasthenia which has deepened into a paresis. The truth is that such a patient has merely passed through a neurasthenoid stage; he has never been truly neurasthenic.

Paresis in the early portion of its initial period is every now and then confused not only with neurasthenia, but also with hypochondria and melancholia. From hypochondria it is readily distinguished by the same factors which differentiate it from neurasthenia. In simple hypochondria, notwithstanding the nosophobia, there are none of those manifold evidences of qualitative mental changes which are so evident in paresis. There is no mental obtusion and the patient is in close relation with his environment and the facts of his daily life. The fact that many paretic patients are in their early history very hypochondriacal, emphasizes the importance of this differentiation.

Because the initial period of paresis is frequently accompanied not only by neurasthenoid or hypochondriacal symptoms, but also by marked mental depression, the error is not infrequently made of confounding early paresis with true melancholia. Melancholia we now know to be a symptom-complex of a more extensive affection, namely, melancholia-mania. The latter is a disease largely hereditary, characterized by periods of emotional depression or of exaltation which extend over months of time and which usually recur in successive waves during the lifetime of the individual. During the melancholic phase of such a wave, the picture presented is one of intense psychic depression associated with ideas of sinfulness, spiritual ruin, or moral unworthiness. There is the great agony of the lost soul, the hopelessness of a wasted past or the belief in some crime never to be atoned. There is not, however, especially in that early period of which we are now speaking, that blunting of the faculties, that change of the relationship to the environment which is shown by deterioration of conduct, of dress and of speech. By a searching inquiry as to factors pointing to such degeneration, the differentiation is to be made, as well as, it need hardly be added, by the presence or absence of a history of previous attacks or of a family history of melancholia-mania or allied neuropathies.

In the above remarks I have purposely avoided dealing with the physical signs of paresis for the reason that as soon as these make their appearance both neurasthenia and melancholia are set aside. I should here, however, mention the importance of an examination of the visual fields which even in the very early stage of paresis may show some contraction—a forerunner of the more or less marked amblyopia present in advanced cases. Such contraction does not, however, serve to differentiate paresis necessarily from neurasthenia, in which in exceptional cases

contraction of the visual fields occurs as a fatigue symptom. Retinal hyperesthesia, on the other hand, is not a symptom of paresis and its existence would be decidedly in favor of neurasthenia. It is immaterial whether the physical signs first make their appearance as a loss or increase of tendon reactions, as loss of light reflex, as tremor of the lips or tongue, or in the form of speech disturbances. Their significance is always the same. This is also the case with the transient paralytic attacks so frequently met with and I will not here discuss the relative importance of these symptoms, as their occurrence varies so greatly in different cases. My function, I take it, is to deal with that period of paresis before the physical signs become so pronounced as to render the diagnosis absolute. In all doubtful cases, before they have made their appearance, we must be guided in the formation of our opinion by the outlines which I have indicated in my remarks. I should add, however, that to my mind there is one general physical sign which precedes all of the others and by which we can distinguish often at a glance a case of beginning paresis from a case of neurasthenia or melancholia, and that is that curious and difficult-to-describe something which we term the "paretic manner." It is made up of those slight and almost infinitesimal changes in the facial expression and gestures of the patient which to the clinician stamp the case as one of paresis. I do not mean the gross smoothing out of furrows, the gross loss of tone in the facial muscles, but that something in the eye, the face, the gestures, the words, which reveal that the patient is not in close and accurate touch with his surroundings, with his business affairs, with the fact of his illness or, for that matter, with any subject. It is the presence of this symptom which in my opinion places in sharp contrast the neurasthenic and the beginning paretic. Finally, the significance of a history of specific infection, when present, is so obvious that it need not here be dwelt upon.

It is necessary to allude briefly to the differentiation of early paresis from alcoholism, brain syphilis, tabes dorsalis and brain tumor. When we come to draw distinctions between early paresis and alcoholism, we come to a subject of great difficulty and much uncertainty. The difficulty is largely due to the fact that many paretics manifest, as one of their early symptoms, alcoholic excess. It is not necessary before this audience to point out the general principles upon which a differentiation is to be attempted; how we should endeavor to establish the presence or absence of those fundamental qualitative changes which characterize the inception of paresis. If in an alcoholic subject obtusion to the properties and moralities be noted, we should remember that, unless alcoholism has become confirmed, these symptoms disappear during the intervals of sobriety when the patient is free from the action of the poison. In the paretic, on the other hand, these mental changes persist even after the alcohol has for a time been withdrawn. Further, the symptoms of a beginning alcoholic dementia are rather those of a simple dementia of which speech disturbances, incoordination of movement and somnolence are not features. There are general psychic obtusion, slowness of thought and some impairment of memory. If the alcoholism has become more profound, auditory and visual hallucinations with mental confusion or, it may be, with delusions of persecution or of jealousy, make their appearance. In other words, if alcoholic dementia be pronounced it is likely to resemble confusional insanity on the one hand or paranoia on the other, rather than paresis. Further, it is unnecessary to dwell upon the common symptoms of alcoholism, the bloated and relaxed countenance, the tremor, the gastric catarrh, the morning headache and the frequent peripheral neuritis. It is not necessary to call attention to the absence of pupillary phenomena, of characteristic changes in the knee-jerks, of tabetic pains, and especially of the paretic manner. Notwithstanding, as I have just stated, because of the frequent coexistence of paresis and alcoholic abuse, the differentiation is at times exceedingly difficult.

It is not my province here to enter into the extensive subject of the differentiation between paresis and brain syphilis. I can only say that we should remember the general rule that in brain syphilis the symptoms are those of an organic lesion, either limited or diffuse, without qualitative mental changes. Somnolence and headache may be equally present, but tremor of lips, tongue or hands, slight incoordination, change in the facial expression, the paretic manner, none of these play any rôle in syphilis. In the early stage it is again the absence or the presence of the qualitative mental changes that is important. The differential diagnosis may, however, be extremely difficult and at times impossible. Here prolonged observation of the patient is the only satisfactory plan.

The relationship between paresis and locomotor ataxia, in the early stages of the two affections, is another subject which is fruitful of discussion, but one which would here be unsatisfactory; first, because the physical signs in the early stages are very few, and, secondly, because some of them are common to both affections, *e. g.*, tabetic pains, incoordination of movement, lessening of knee-jerk and beginning optic atrophy. As is well known, many cases which begin with the symptoms of tabes dorsalis end in undoubted paresis. All cases, however, of locomotor ataxia, presenting anomalies of the symptom-complex, such as preservation or exaggeration of the knee-jerk, or slight ataxia of the legs with marked ataxia of the arms—cases of so-called superior tabes—should be regarded with suspicion. It must be frankly admitted, however, that in the early stages a differentiation between paresis and tabes may be impossible. This is not surprising when we consider that paresis and tabes are not only very closely related, but are possibly one and the same disease. The

pivotal point is, again, not the presence or the character of special physical signs, but the presence of mental changes. If these be absent, paresis cannot be diagnosticated. Similar remarks apply to the differentiation between paresis and other gross organic disease of the brain. Brain tumors, for instance, when in silent regions may produce none but general symptoms, and, unless they be situated in the frontal region, mental changes are as a rule entirely wanting. Here again, it is the absence of qualitative mental phenomena upon which in early cases the differentiation is to be based.

Let me say, in summarizing my views concerning the early recognition of paresis, that it is of the utmost importance to study carefully the symptoms of every so-called case of neurasthenia that comes before us. After physical signs have made their appearance, the recognition of the disease is relatively easy; but it is during the initial period, the neurasthenoid stage, as I term it, that the diagnosis should be made. It can be made, I believe, in the larger number of cases by bearing in mind the clear and well-defined symptomatology of chronic fatigue—neurasthenia—on the one hand, and the special symptoms of the mental weakness and degeneration of paresis on the other.

TREATMENT OF PARESIS; ITS LIMITATIONS AND EXPECTATIONS.[1]

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THE *treatment of paresis* as a subject for discussion presents itself, at first sight, as difficult and uninspiring in view of its hopelessness. But I am asked to speak especially of the limitations and expectations of treatment; this leads the way to a field of inquiry in which lie some of the most profound problems in medicine. The time now available being brief, I shall speak of our present unsatisfactory means of treatment of a disease as yet regarded as incurable, only to indicate the limitations under which we labor.

The diagnosis being made, the prognosis being a fatal ending usually two to four years after the manifestations of the disease have been recognized, we are limited to measures for palliating its consequences. The patient needs immediate protection when the onset of the disease is an acute attack of melancholia or mania; when the dementia comes on insidiously, protection of the personal and business interests both of the patient and of his family is equally important. Custodial measures become therapeutic, together with treatment of general symptoms, when remissions are promoted through improvement in physical health and strength, neurasthenic conditions being especially characteristic of the prodromic and early stages of the disease. The prescribed method always includes "tonics" in all appropriate forms, and a generous diet with interdiction of alcohol. Hydrotherapeutics, now coming into more general use, is often beneficial.

It is aside from all these generally indicated expedients for the management of the cases that the real therapeutic problem arises and baffles our art. The psychiatrist finds himself here in a remarkable position; it is that of being confronted by a well-defined mental disease-form, with concurrent physical signs more distinctive than in any other mental disease. These point, by both sensory and motor symptoms, to lesions of the nervous system that show a recognizable underlying disease-process with progressive structural changes producing chiefly extensive degeneration of the nervous system. More than in any other of the true mental diseases, which are such because the mental symptoms essentially constitute the disease-form, have researches in anatomical pathology been possible in the attempts to find an explanation of the mental symptoms. But, for some recent years, little advancement of our knowledge in this direction has been made. Therefore the psychiatrist, who must really do his clinical work from the standpoint of the general physician, has found a barren field of limitations for his therapeutic guides when he turns to neurological histology and pathological findings. This is a most significant fact, for, so far as this line of research can go, we are likely to come to the same limits in other forms of mental disease should there ever be discovered concomitant structural changes characteristic of them. The pathological anatomist as our pioneer leads us to this frontier of our realm—to the Castle Mystery, and lays siege to it; when he fails to carry it by assault, he saps and mines, and employs the strategy of hypothesis, spies of subtle inference and arrows of swift conjecture, often Parthian arrows indeed. Still we wait before the impenetrable wall of our difficulty. It is with us, both in general medicine and psychiatry, much as it was with our fathers when they said the signs of inflammation are heat, redness and swelling. The work of penetration into that which underlies has gone deeper, but, our attitude of inquiry remaining precisely the same, we have the superficial replaced by the parenchymatous. We are reaching the limits of knowledge through the study of change in structural form and appearances to the eye; the infinitesimal becomes the insurmountable. We are learning that, inasmuch as psychology and physiology can tell us nothing to explain the normal mechanism of mental activities, we can not expect to see, through the microscope, an explanation of disordered thought and feeling.

It would be a cause of great regret on my part if there should seem to be any disposition, in the hospital work which I represent, to diminish in the least the importance of research in pathological anatomy. But there are reasons for seeking an explanation of our clinical problems in the still deeper underlying plane of physiological chemistry. Let me quote from a statement made

[1] Read before the Medical Society of the State of New York, at Albany, January 28, 1902.

from this point of view:[1] "That microscopically visible structural changes in any tissue, or in the cells of any tissue, must be preceded by more or less pronounced metabolic changes is surely self-evident. Metabolic changes are chemical changes. Chemical changes are the physical exchanges and transformations that take place in the physical units of matter—the molecules; and the molecules are beyond the ken of the microscopist."

Turning now to etiology, in accordance with the principles of general medicine, we find limitations in the logic of treatment under the leading conceptions of the etiological factors of paresis, which are syphilis and heredity, with alcohol and the stress of modern life contributing. Following the guidance offered by these factors it has been common, outside of the hospitals, when the diagnosis is made and there is a suspicion of syphilis, to treat the cases with mercurials and iodides; in the hospitals this is found to be so futile and even harmful that the practice advocated by many alienists is generally followed in using antisyphilitic treatment only when active syphilis is present. With respect to heredity authorities differ. Our experience at the McLean Hospital agrees with that of many observers in the evidence it gives that paresis is less frequently due to heredity than are other forms of insanity. The rôle of heredity, in whatever relation it may bear to insanity in general, is that of inducing a constitutional instability. This neuropathic weakness when transmitted from a syphilitic parentage, or when induced as a sequel to an acquired syphilis, is regarded as having a like influence with stress from excessive mental activity. These predisposing factors working together tend to determine which part of the overworked mechanism is to yield to the active cause of the paretic disease. Alcohol may be a contributing factor also by reducing the normal resistence to morbid influences. In these ways comes the conception of neurasthenic conditions, constitutional or acquired, as having an intimate relation with the onset and course of the disease-process. Hence arise questions of early differential diagnosis between neurasthenia and paresis. Undoubtedly a neurasthenia may be the first to appear, when it is only the effect, and not a part of the cause, of the still unrecognized general paralysis. A history of syphilis always excites suspicion. Out of these etiological considerations we get, so far, no clearer guides for treatment; antisyphilitic measures, theoretically indicated, fail, and we are left to deal with a general and very empirical conception of neurasthenia.

The history of the course that has been taken by the study of this problem leads to an interesting field. While the limitations of our therapeutics continue to be apparent, I can now enter upon the second part of my subject—the expectations of treatment. That paresis has its chief cause in specific disease is not a conclusion from any discoverable relations between known specific and paretic lesions. The arguments deal with the prevalence in cases of paresis of a history of acquired syphilitic infection, or of its inherited effects. This doctrine is gaining ground, although some authorities demur; it is argued that, syphilis not being proven in many cases, it should be held not as an essential but only as a predisposing cause. Krafft-Ebing's dictum that general paralysis is a product of civilization and syphilization and Oppenheim's statement that paresis is the outcome of stress and syphilis give expression to opinions that indicate no more than a sequence of facts, showing the frequency with which specific infection is followed by paresis. As explanatory of a probable real connection in the pathology of these two diseases, it is becoming generally assumed that there is some intervening factor or condition that unites them. Oppenheim points to this in making the distinction that people without syphilis, but who are the subjects of mental stress, excitement and excesses, are liable to develop neurasthenia; the syphilitic neurasthenic, however, is liable to dementia paralytica. That there may or must be an intermediate element between the two diseases is now either intimated or assumed by most writers and alike by the advocates of the two leading theories of their pathogenesis relating respectively to the nervous and the vascular systems. We need not dwell upon the arguments for the opposing hypotheses, as to which is first in the disease-process, because they refer alike to the toxemias as intervening factors. Though still hypothetical this indicates, at least, the trend of the time in medicine.

We come now to the subject that is of prime importance in our discussion of expectations in the treatment of paresis, and of our grounds for them; our problem lies distinctly in the field of general medicine, putting the general physician and psychiatrist in precisely the same position toward it. It is not my part here to discuss the pathology of this disease, but it may be permissible to cite briefly some authoritative statements that set forth the aspects of the problem which I wish to consider.

Dr. Mott in the *Archives of Neurology* for 1899, indicating his reasons for supposing that paresis is a primary degeneration of the neuron with secondary inflammatory changes, says that "it is a parenchymatous degeneration due to a loss of durability of the nerve-cell—a premature decay of tissue in which inherited and acquired conditions take part, with the result that progressive death of the latest and most highly developed nervous structures ensues as soon as their initial energy is unable to cope with the antagonistic influences of environment."

Kraepelin,[1] regarding the changes in the nerve parenchyma as the primary alteration, thinks that the microscopical pictures of paretic lesions indicate intoxication. He says that everything points to a grave nutritional disorder and that the disease, is analogous to myxedema, diabetes

[1] Otto Folin, Chemical Laboratory, McLean Hospital. Notes on Relation of Pathological Chemistry to Pathological Anatomy.

[1] Psychiatrie, 6th ed. Leipsig, 1899.

osteomalacia, acromegaly, and the like; he suggests that we have to assume an intervening element between syphilis and paresis, just as we have, for example, a myxedema develop when the thyroid becomes destroyed by tuberculosis.

Wernicke,[1] regarding a primary destruction, or necrosis, of the nerve tissue, analogous to the degenerative neuritis in the peripheral nervous system, as the primary process, says the paralytic etiology resembles most the action of poisons. But in general paralysis we must assume that the poison is constantly being produced in the body, as the progressive fatal characteristics can not be otherwise explained. This poison must be metasyphilitic, yet we must assume a bacterial action as the basis of the peculiar condition. The purport of this is that, as in other progressive remitting diseases, the acute and quiescent phases of paresis represent, respectively, the resistive reaction of the body to some toxin, and remissions of its activity indicating cessation of the toxemia. The views of authorities generally harmonize with the conception of intervening factors. These may, of course, have their place outside of, as well as in, the nervous system itself and elsewhere in the body. Although such representative opinions do not yet furnish us with guides to treatment, as they hardly take us beyond the stage of hypothesis, yet, nevertheless, they point to a toxemic origin in the pathogenesis. Thus we as psychiatrists find ourselves engaged in the general movement of the time and, sharing in the great advancement in general medicine, we are encouraged in our expectations of things hoped for in our special field of mental medicine.

On the common ground of general medicine, it is of interest to refer to a statement made from this point of view by Sir Dyce Duckworth of the principles upon which our new position is based. In an address, in November, 1900, to the British Medico-Psychological Association on "Mental Disorders Dependent on Toxemia" he expressed the generally accepted opinions. He said that toxemic states have been long recognized as clinical features of disease, and the sources of them are as varied as are the separate toxic elements which induce them. Progress in physiological chemistry and bacteriology has now furnished us with the means to explain these conditions. Referring to the action of auto-intoxication, disturbing the harmony of intimate brain-cell metabolism, he noted the deliria of many debrile conditions as examples of distinct toxic infections. After mentioning myxedema as leading, in like manner, to mental disorders resulting from altered metabolism due to deficient thyroidal influence, it is stated that general paralysis is now regarded as coming into the category of auto-intoxications. His suggestion as to the course of the pathogenesis is one of the interesting variations of the hypothesis. Syphilis, although the common antecedent of paresis, does not provide the toxin, and we must therefore view its part in the etiology as leading to progressive degenerative nervous changes, which in turn so modify the intimate metabolism of the tissues as to set free toxic elements. As the various toxic agents which gain admission to the circulation manifest elective affinities for particular systems of neurons, hence the varied results of perverted nutrition and metabolism with the production of new toxins. While these fields of study are yet much unexplored, there are many investigators in them, and here and there knowledge is gained that guides to treatment.

We have now come in this discussion nearly to its ending, yet upon the grounds so far considered we find ourselves still in the region of hypothesis with waiting expectations of new light upon the treatment of paresis, but with reasonable faith in their final realization. To this practical end, indeed, we may be nearer than has yet been supposed. A new phase of the problem has been presented in contributions by Dr. Bruce and Dr. Ford Robertson at a meeting, last June, of the Medico-Chirurgical Society of Edinburgh. Dr. Bruce, in his observations of paresis for a number of years, noted the common occurrence of gastric and intestinal disorders, with exacerbations accompanied by rise of temperature and hyperleucocytosis. He suspected a toxemia due to intestinal bacteria. Obtaining blood-serum by wet cupping for lumbago from a paretic patient having a well-marked remission in the second stage, he treated two earlier progressing cases with subcutaneous injections daily for three weeks. The result was complete remissions in both cases, then of two years' duration. Further experiments are in progress to procure blood-serum from a horse immunized to bacillus coli. Dr. Bruce believes that small subcutaneous injections of such serum for three weeks or a month may produce artificial remissions of this disease. His conclusions are:

1. General paralysis is a disease directly due to poisoning by the toxins of bacteria the point of attack of which is through the gastric and intestinal mucous membrane.

2. The poisoning is probably a mixed poisoning, but the bacillus coli is apparently one of the noxious organisms.

3. The result of treatment with serum, taken from a case of general paralysis in a condition of remission and injected subcutaneously into an early progressive case, points strongly to the fact that some form of serum treatment is the proper treatment for this as yet incurable disease.

Dr. Robertson, in his observations upon this subject, referring to Dr. Bruce's cases, takes the position, contrary to the opinions already cited, as to pathogenesis, that the theory of the existence of chronic toxemia is virtually a further elaboration of the view that the cerebral vascular lesions constitute the first anatomical alteration in general paralysis. He cites authorities defending this view and reaches the following conclusions:

General paralysis is dependent upon the occurrence of chronic toxemia of gastro-intestinal

[1] Grundriss der Psychiatrie, 1900, Leipzig.

origin; the toxins are mainly bacterial and are formed in consequence of a partial breakdown of those forces by which the harmful development of the micro-organisms that constitute the ordinary flora of the alimentary tract is normally prevented; the toxins are absorbed and tend specially to produce proliferative and degenerative changes in the vessels of the central nervous system, and these vascular changes tend to set in earliest in those parts of the brain that are relatively best supplied with blood, because their walls are brought in contact with the largest quantities of toxins. The part played by syphilis in the pathogenesis of general paralysis and tabes dorsalis is essentially that of altering the natural immunity; and the treatment should be directed primarily to the correction of the disorder of the alimentary tract. Probably the only means by which it will be found possible to check the excessive growth of the gastro-intestinal bacteria is that of the employment of specific antitoxins; and to avert the disease by such means may be more practicable than would at first sight appear, because it is probable that the specially injurious toxins are the products of only a few bacterial forms.

These contributions are very interesting and are most stimulating to further researches in the direction pointed out by Dr. Bruce's work. While not yet conclusive these results are consistent with the general trend of opinion that the toxemias are the intervening factors; and, for the present, it is along this line of research that our expectations are led. If they are verified as a substantial addition to our knowledge then we may be fairly placed on new ground in respect to mental diseases in general.

This discussion of the treatment of paresis was hardly expected, I presume, to lead to any definite conclusion; indeed the statement of the subject suggests speculative inquiry. But still we are on firm foundations, upon the principles of bacteriology and physiological chemistry. There are several by-products of such a study as this. We are shown the limitations of pathological anatomy that, instead of expecting to find explanations of mental symptoms in terms of structure, we must seek in the deeper plane of the chemistry of nutrition explanations of both function and structure and of the changes in them. We see that the final test of all observation, hypothesis and theory is treatment; that we who minister to the sick must apply all the needed knowledge that can be gained; that we, with our problem in the living patient, do right to exalt the clinic, for the uses of which we may claim all the contributions of expert research. It is in the arena of the clinic that the patient and the physician are the leading players in the game of life and death.

Mt. Sinai Hospital.—Dr. S. S. Goldwater has been appointed assistant superintendent of Mt. Sinai Hospital and will enter upon that service on the completion of the new buildings at Fifth Avenue and One Hundredth Street.

SCLEROTOMY, ANTERIOR AND POSTERIOR; WHEN INDICATED IN GLAUCOMA; METHOD OF OPERATING.

BY DAVID WEBSTER, M.D.,
OF NEW YORK.

IN regard to sclerotomy anterior I have very little to say. I performed the operation in a very few cases years ago, and with so unsatisfactory results that I abandoned it. Still there seems to be a general impression among my colleagues that the operation of anterior sclerotomy has "come to stay;" that it has a place in ophthalmic surgery and that it should be resorted to in hemorrhagic glaucoma especially. I think it might be advantageously resorted to in acute or subacute glaucoma supervening upon nephritic retinitis. In my experience iridectomy fails to relieve the tension and arrest the disease in the cases referred to. The operation amounts to little more than a large paracentesis. There is no doubt that it will bring about a lessening of the tension of the eye, at least temporarily. There is also little doubt that in most cases of glaucoma iridectomy is the better operation. As to the method to be pursued in operating, probably that described by De Wecker is as good as any. Those who wish to know what is worth knowing of the history of sclerotomy anterior and posterior are referred to Dr. Knapp's article on "Operations Usually Performed in Eye Surgery" in Norris and Oliver's "System of Diseases of the Eye."

As to sclerotomy posterior in glaucoma, my experience has been restricted to a single case; but the result of the operation in that case was so gratifying that I feel justified in giving a report of the case in full.

On February 27, 1901, I was called to see Mrs. A., then in her ninetieth year. I found that she had chronic glaucoma supervening upon retinal hemorrhages and hemorrhages into the vitreous which had been observed by another ophthalmologist some months previously. Vision was reduced to perception of light. The pupil was slightly dilated and sluggish, the anterior chamber rather shallow, the tension a little increased, and, notwithstanding the turbidity of the vitreous, the optic disk could be seen to be cupped and atrophic looking. There was no pain, however, and no redness of the eyeball, the only thing the patient complained of being the loss of sight. I advised the moderate use of the other eye, which was normal, and gave her a prescription for a 2-per-cent. solution of pilocarpine, to be dropped into the eye in case there should be pain. I was sent for again two weeks later (March 13th). The patient informed me that three days previously she had become interested in a new edition of Boswell's life of Johnson with copious fine marginal notes, and had read it nearly all day. At night the eye began to be painful, notwithstanding the use of the pilocarpine eye-drops, and had become worse. I found the eyeball deeply injected, no reflex from the fundus, no perception of light,

the tension more increased than when I first tested it, the pupil more dilated and the anterior chamber nearly obliterated.

I ordered eserine, cocaine and iced cloths. Her general condition was looked after in consultation with her family physician. I would have done an iridectomy as soon as possible, but, in order to accomplish that, anesthesia by ether or chloroform would have been necessary. On account of the great age and extreme feebleness of the patient both the family physician and myself were unwilling to assume the risk. All the measures resorted to, local and general, failed to relieve the pain, and it became evident that something must be done in the way of an operation, else the patient would die of exhaustion due to sleeplessness, anorexia and innutrition.

Although I had had no experience with posterior sclerotomy, except in detachment of the retina, I determined to try it in this case, if I could obtain the patient's consent, because (1) it would not require any considerable amount of self-control on the part of the patient, (2) because I knew that under cocaine the pain caused by the operation would be comparatively slight, and (3) because I had heard and read of cases in which posterior sclerotomy had relieved the pain and quieted the eye. Accordingly, on March 27th, two weeks after the onset of the attack, assisted by her family physician, having dropped some of a 6-per-cent. solution of cocaine into the eye half a dozen times at intervals of three or four minutes, and having washed the eye with a solution of bichloride of mercury, 1-5,000, I made a meridional incision into the eyeball between the insertions of the external and inferior recti muscles. Holding the eyelids open with my index and middle fingers, for I knew that speculum and fixation forceps would not be tolerated, I punctured the eyeball just back of the ciliary region and extended the incision as I withdrew the knife so that it was about three times as long as a Graefe cataract knife is wide. Some fluid escaped as I withdrew the knife, but apparently only a few drops. A bandage was applied and, to the gratification of all concerned, as soon as the immediate, slight hurt of the operation had passed off, the pain in and about the eye ceased. I washed and rebandaged the eye daily, but used no mydriatic or myotic. On the eighth day, as the wound seemed sufficiently healed, I removed the bandage, but as there was some pain on the following night I reapplied it and the pain ceased. I kept up the bandaging nine days longer and then finally discarded it. There was no more pain. The eye continued to whiten up and the general health of the patient improved. I saw her last on April 25th, when the eye looked about as white as the other. At the site of the wound was a delicate, slightly dark colored, linear scar that was hardly noticeable.

Cancer Hospital for Scotland.—J. K. Caird has given £18,000 for the erection of a cancer hospital in Dundee. He also has guaranteed £100 annually for five years for a laboratory for cancer research.

A DANGER FROM THE EMPLOYMENT OF THE WEIGHTED VAGINAL SPECULUM.

BY FREDERIC GRIFFITH, M.D.,
OF NEW YORK;
SURGEON, BELLEVUE DISPENSARY; FELLOW OF THE NEW YORK ACADEMY OF MEDICINE.

The writer, when a student of medicine, received instruction in the principles of surgery from John Ashhurst, and many times heard that master deprecate the employment of any mechanical device which took away control by the surgeon's hands.

A case in which the weighted vaginal speculum played the part of a complicating factor was as follows:

Mrs. A., aged twenty-five years, came to me six months before the present history to consult me in regard to apparent tumorous growths in her breasts. I had her under observation for a month, when she passed from view with the understanding that if increased growth did not occur I was not to see her until fall. Later events have proved to my mind that the breast conditions were largely due to the sexual life that the woman led; married five years and both parties sexually very active, they indulged only in restricted intercourse until last summer, when a visit to the scenes of early life exhilarated the couple to such degree that unbridled license was taken and received with resultant pregnancy. Having exhausted the household remedies of sympathizing friends in the country place, in the interior of the State where she was, the woman returned to town and called on me to produce an abortion, giving financial straits and morning sickness as reasons. Inquiry led me to believe that the woman was three or four weeks pregnant. Ignoring the uterine "trouble," I treated the morning sickness, giving her ¼-grain calomel tablets, of which I ordered her to take one night and morning, and desired not to see her for a month, when I contemplated assuming the rôle of a moralizer (the writer has at least one boy of good size to produce as an exponent of the success of this plan of action). The woman returned at the end of a week and stated that her stomach was now all right but that she had not become unwell; I repeated my request and she went away somewhat out of humor. Nine days later I was asked to call and learned upon arrival at her house that three nights before she had, unaided, passed a No. 8 (English) woven catheter into her uterine cavity. Drawing up a statement of the nature of the case and that she alone was responsible for her condition, I had the woman sign her name in the presence of a female friend who was attending her. This was for my own protection and if at any time during the course of treatment death had appeared imminent I should have communicated with the district attorney.

The patient had been taken with vomiting upon the second day and had had three chills prior to my visit. I found her with tongue coated, bowels loose, a tender belly, and with pain in the

small of the back. She was in a vivacious frame of mind, her eyes sparkling with undue brightness, pulse good at 108, temperature 99.6° F., and respiration 28. There had been no hemorrhage, but a penetrating stench came from the small quantity of shreds and fluid which soaked the two or three napkins used during the day.

In lieu of bags, hot stove-lids were wrapped in blankets and placed beside the patient's legs and body, and the bowels were moved during the night with a calomel purge. At noon the next day, having the assistance of an anesthetizer, the woman (under ether) was placed in the lithotomy position at the edge of a table and a bulb-weighted, irrigating vaginal speculum of medium size, weighing twenty-four ounces, was placed in position, hanging down over the perineum from the posterior commissure. Finding the vaginal portion of the cervix to be of a mottled, livid and yellow color, I, without the aid of a tenaculum or volsellum forceps, inserted a dilating forceps and enlarged the cervical canal to a finger breadth, carrying on copious irrigation meanwhile with sterile water as hot as could be borne. Curetting the uterus with a dull, flat curette and continuing the irrigation until three gallons had been employed, the lower genital tract was left with a fresh, clean smell, water coming away clear and the tissues blanched. The first two days I used a sterile gauze drain, later and, until it was expelled by the contracting cervical canal, a thick-walled glass tube about the size of a No. 30 F. sound. Irrigations were carried on through this, it being removed from time to time for cleansing.

The first irrigation and curettement, during which time the speculum was in place, occupied thirty minutes. A gauze pack for the vagina and a perineal binder completed the dressing. The patient reacted well, with an evening temperature of 101° F., pulse 120, and respiration 23, and next day had a temperature of 99.6° F., pulse 96 and respiration 20; the discharge continued to be slight and with a fresh odor.

Upon the fourth day, without systemic reaction, the discharge became very fetid. Two irrigations had been given daily and were continued to the end, the nozzle-tube inserted by the aid of a Sims speculum or the handle of a curette. An examination showed the floor of the vagina to be sloughing in an outline fitting the speculum first used. A weak solution of hydrogen dioxide caused the slough to disintegrate rapidly and the ulceration healed in the course of three weeks.

During the fifth week following operation the patient had a return of menstruation, lasting four days and normal in its characteristics. A final examination made two days later showed the vaginal cervix completely restored and the site of the sloughed area in the vaginal floor appearing like a well-healed, repaired laceration.

This woman came to operation in excellent condition, of good muscle and of strong nervous energy, and the writer feels justified in extending the warning against the use of such weighted instrument for any length of time in a case in which pressure opens the way for the assaults of infection.

805 Madison Avenue.

ORTHOPEDIC OPERATIONS FOR INTRACTABLE CEREBROSPINAL CORD LESIONS, WITH REPORT OF TWO CASES.[1]

BY HOMER GIBNEY, M.D.,
OF NEW YORK.

MANY years ago at the Hospital for Ruptured and Crippled I was attracted by the apparently hopeless condition of many children, victims of various forms of paralysis for the relief of which apparatus alone was employed, and this in many instances ill fitting. I was told that little else could be done beyond hand manipulation or massage in a crude way, and, like all lay people, I looked upon this irremediable condition as most pitiable. Gradually tenotomies, fasciotomies, myotomies and more recently tendon transplantion were begun and since I have been in medicine I have seen many of these patients, now grown into young womanhood and manhood, walking about quite well, some still wearing braces, but vastly improved by the timely interference of the orthopedic surgeon's tenotome or fascia knife, promptly followed up by a carefully-fitted apparatus.

Not a few of the many troublesome cases of cerebrospinal cord lesions come to us for apparatus, the neurologist having employed various remedies, such as electricity, massage, arsenic, phosphorus, silver nitrate, and all the nerve tonics known. The patient's general condition is fair or good; the disease, having been arrested or having run its course, has left him with a deformity, a dangle leg, contractures, a talipes equinus, cavus, valgus, varus, calcaneus, or with a combination of two or more of the various types of clubfoot, and not infrequently deformities of the upper extremities. These are the deformities of spastic paralysis and of infantile paralysis or anterior poliomyelitis, and are permanent until corrected. Those of compression paraplegia, of Pott's disease of the spine readjust themselves under carefully prolonged treatment and call for no operative procedure.

Friedreich of Heidelberg, in 1861, first classified and described the symptoms peculiar to a series of cases. Gowers, Oppenheim and others recognized them and these cases came to us as hereditary or Friedreich's ataxia.

The cases I report present the major portion of these symptoms and the operations done were for the corrections of the existing deformity which would make locomotion more easy. The point I wish to emphasize is to operate on these unyielding, stubborn and intractable deformities of cerebrospinal origin and, having corrected or overcorrected them, to apply promptly a well-fitting, comfortable apparatus best suited to each individual case, thus facilitating locomotion and in a degree ameliorating the condition.

[1] Read before the Orthopedic Section of the New York Academy of Medicine, 1901.

Case I.—Female, aged fourteen years. Mother died of some acute illness. Seven children in family, three of whom are cripples; two girls showed evidence of disease at seven, one boy at eight years. Patient complains of pains in lumbar region, she tires easily, faints and is unsteady in gait. Lower extremities frequently become numb. Menstruated six months ago. Apparently growing more insecure on feet. At the physical examination she was shown to be a fairly well-nourished girl; ataxic gait; no tremor; no nystagmus; pupils equal and respond readily to light. Spine presents slight lateral deviation; right scapula is on lower plane than left. Patellar reflex absent. Both feet held in moderate cavus, right most marked. Plantar reflex accentuated. Great toes flexed at distal phalanx.

Operation was performed July 23d, under gas and ether. A long incision over tendo Achillis of left foot was made, the tendon exposed and lengthened. The edges of sheath, fascia and skin were approximated and sutured. The tendon of the right side was divided subcutaneously, the plantar fascia was severed and both feet were put up in plaster of Paris at 85°.

August 26th: Plaster dressing cut down and union found good and firm with fair voluntary dorso-flexion: double uprights with stop-joint at ankle later applied.

November 4th: Discharged; locomotion much improved.

Case II.—Male, aged twenty-six years Family history negative; one of five children, all of whom are living and well. Always well until, at ten years of age, he had an acute illness from which recovery was slow. When twelve he experienced difficulty in standing any length of time and walked with an effort; legs tired easily. Began to use crutch and stick as he matured. Dragged left leg in his effort to walk and gradually became more insecure. He was referred to me for "walking apparatus." The physical examination showed a well-developed man as to trunk and upper extremities. Walks with crutch and cane, awkwardly and with left leg rotated in. nystagmus. Pupils react to light readily. Spine slightly deviated to right. Patellar reflexes absent. Tactile sense diminished on left side. Left foot held in marked cavus and great toe slightly flexed, trigger shape. Right heel comes down well.

Operation was performed October 26th, under gas and ether. Left tendo Achillis divided subcutaneously; contracted plantar fascia severed; the great toe stretched and the whole foot put up in overcorrected position.

November 10th the plaster of Paris was cut down and union found firm; slight dorsoflexion. The foot was held in position by a reapplied light plaster-of-Paris bandage.

November 12th the dressing was removed and the foot was put into a shoe to which were attached double uprights with stop-joint at ankle. On the 14th he was discharged, walking with foot squarely and much more easily.

MEDICAL PROGRESS.

SURGERY.

A Rare Complication of Hernia.—Rupture is a vitally important condition and its unusual complications are worthy of note and record. The following rare case comes within this category and is reported by F. T. TRAVERS (Lancet, Mch. 15, 1902). The woman was sixty years old, had a small umbilical hernia and suffered for years from winter cough. On February 20th a severe fit of coughing occurred and caused something to "give way" in the abdomen. Upon examination her physician found a mass of intestines protruding from an aperture at the side of the hernial swelling. Operation was absolutely necessary, but could not be done at her cottage. Her extruded bowel was wrapped in warm cyanide gauze, temporarily supported with bandages and the patient was removed to the West Kent General Hospital, a matter of difficulty because she weighed two hundred and twenty-five pounds. She showed shock upon arrival. Ether was at once administered; the abdominal wall was cleansed and the gauze wrapping removed and six feet of small intestine were found to be protruding from a rent one and one-half inches across in the site of the umbilical hernia; the gut was irrigated with chinosol solution, one in twenty-five hundred, and wrapped in warm sterilized towels; the wound in the skin was enlarged until the bowels could be replaced; a portion of omentum adherent to the interior of the sac was ligatured and removed and the walls of the sac were freed and sutured; the sides of the opening in the fascia were brought together by a continuous suture and after cutting out the portions of skin around the rent the wound was closed. Although after the operation the patient's condition at first improved somewhat, she later sank rapidly and died of heart-failure thirty-eight hours later. There were no ulcerations over the point of the rupture and no stretching or thinning of the skin. The sac and the skin were considerably thickened and had apparently torn in a straight line without any previous warning. Probably the patient's extreme obesity and the loss of elasticity of the skin accounted for the accident.

Spina Bifida.—The correction of malformations bears life-long importance from the point of view of the patient and its success is of material value to the surgeon. The treatment of spina bifida by the injection of a solution of iodine in glycerin, known as Morton's fluid, is in a few cases successful. Its use was extended by the recommendation of a committee on the subject appointed in 1885 by the Clinical Society of London. From the knowledge of the pathology of this disease one is justified in thinking that such injections effect a cure only in pure meningocele and that it can do no good in a meningomyelocele or in a syringomyelocele. Since, however, it is rarely possible to decide with certainty that any part of the spinal cord or its nerves is included within the sac, there is nearly always some risk in employing injections, even if the danger arising from infection through the puncture be not considerable. In consequence of this difficulty excision of the sac is now frequent. The two chief dangers are sepsis and the loss of cerebrospinal fluid, which may lead to grave disturbance of the circulation in the nerve centers. Scrupulous care will avoid the former and the danger of fluid-loss can be controlled by deliberation in the operation. Excision is applicable often in cases in which spinal nerves are contained in the sac, says G. L. ST. GEORGE (Lancet, Mch. 15, 1902). They may be returned within the bony canal and such an aseptic operation must certainly be safer than the indiscriminate injection of an irritating fluid.

Internal Knee Derangement.—The diagnosis of this condition drawn from fifty-nine tabulated cases is summed up as follows by H. W. ALLINGHAM (Lancet, Mch. 15, 1902). All present either the characteristic symptoms of locking of the joint or else weakness with recurrence of pain and swelling, which are often the only signs of damage to the semilunar cartilages. This series of cases illustrates the following conditions: (1) The semilunar cartilage, interior or external, split, loosened, displaced or torn from either or both extremities, or the coronary ligaments; (2) loose bodies, either quite free or pediculated; (3) torn or hypertrophied alar ligament or fringes of the synovial membrane; (4) rheumatoid arthritis, roughened cartilage, thickened synovial membrane and osteophytic outgrowths; (5) no obvious derangement. There are some points which help in differentiating between these conditions, although not seldom symptoms strongly pointing to one may prove to be due to another. In cases of damage to the semilunar cartilage there are usually these features: Distinct history of injury originating the trouble; a well-defined site of pain on the inner or outer side of the knee according to the cartilage damaged; no palpable foreign body; no creaking in the joints. These same features usually characterize such cases as are due to affection of the alar ligament and localized hypertrophy of the synovial membrane. Cases in which a loose body is present may be similar to the above or the body may be found at widely different parts of the joint either from the pain or by actual discovery by the examining hand. A very loose semilunar cartilage may sometimes present the same peculiarity, but to a slighter degree because its appearance is limited to the side and lower part of the joint. Such a cartilage might be imitated by a loose excrescence due to rheumatoid arthritis.

Sciatica.—A fine point in the diagnosis of sciatica is emphasized by R. VON BARACZ (Ctlblt. f. Chir., 1902, No. 9), although it was originally described by Laségue. This phenomenon consists in the fact that usually in the presence of sciatica the affected hip may be manipulated without pain provided the knee be fully flexed at the same time. If, on the other hand, the knee be maintained in hyperextension and the hip then manipulated, immediately along the course of the whole nerve there will be pain, which is most marked and most constant at the point where the sciatic nerve passes out from the pelvis, namely, at the greater sciatic notch. Not only is the pain most acute at this point and under these conditions, but the tenderness is also increased. Another observer (Fajersztagn), to whom the author gives credit, states that a similar condition of pain and tenderness at this same point is aroused when the lower extremity of the healthy side is lifted with the knee in hyperextension. The observer of it calls this symptom the crossed sciatic phenomenon. By experiments upon the dead body it has been satisfactorily proved that the phenomenon discovered by Laségue is caused by a mechanical stretching of the nerve. In the cross sciatic phenomenon the effect of the stretching is simply referred to the diseased nerve by a pull on the dura mater. Fajersztagn also proved this by numerous experiments on the dead body by means of which he found that even a moderate stretching makes a pull through the sac of the dura mater directly on the roots of the opposite sciatic nerve.

Prolapse of the Liver.—Attention is called to the clinical picture presented by the downward displacement of this organ and a method for its relief by surgical means by A. F. JONAS (Jour. Amer. Med. Assoc., Mch. 29, 1902). In discussing the etiology of this condition several factors must be considered: (1) The intimate contact of the two arched surfaces between the liver and diaphragm, (2) the suspensory ligaments; (3) the intimate relations between the vena cava inferior and the liver; (4) the hollow viscera; (5) the abdominal walls. A defect in one or more invites a displacement, which may be brought about by trauma or by prolonged increase in the weight of the liver from venous or biliary obstruction. Clinically one usually finds relaxed abdominal walls, gaseous distention, constipation, gastroptosis and enteroptosis, pains under costal arch, increase of liver dulness, often a biliary obstruction with its particular symptoms. In the treatment of this condition the author recommends suturing the gall-bladder in the uppermost angle of the wound which has been made for the removal of the gall-stones, close under the costal arch. The sutures can pass through the bladder wall, the parietal peritoneum and muscles. He has attained excellent results.

Gelatin as a Hemostatic.—A little history in medicine is at times a relief. Y. MIWA of Japan (Ctlblt. f. Chir., 1902, No. 9) states that gelatin was used as a hemostatic in Europe in the beginning of the last century, while in China and Japan there are records as early as the third century, A.D., according to which it was used for this purpose in all kinds of hemorrhage. It seems to have been taken to Japan chiefly by the Chinese themselves, among whom it was in use rather generally at about 1000 A.D. Of course, in China and Japan at these times subcutaneous and intravenous injections of gelatin were unknown, while a solution of it in water was the chief method of administration. Occasionally it was given in powder form, for example, in nose-bleed by insufflation. The Orientals used it also in hemorrhages from the lungs, the genito-urinary apparatus, the womb, especially in abortion, the intestines, including the rectum, and in anemia, not always pure but usually mixed with other drugs and, as a rule, in comparatively large doses. It was commonly combined with the following drugs: Coptis brachypetala, pæonia officinalis, panax ginseng, gardenia florida, rehmannia lutea, scutellaria macranta, artemesia moxa, and powder made from the rhinoceros horn. A favorite prescription there even to-day is the following: Coptis brachypetalæ, 2 parts; scutellariæ macrantæ, 1 part; pæoniæ officinalis in decoctum, 1 part; mix and add gelatin, 3 parts, egg albumin, 2 parts. In addition the Chinese and Japanese used it as a foodstuff and a means of enriching the blood, just as to-day iron is prescribed. The question whether gelatin acts as a hemostatic the Chinese answered in this manner. Copious bleeding is equivalent to some anomaly of the quantity of the blood or of its thickness. This the gelatin sets to rights. It enriches the blood, thickens it, and thus stills the bleeding.

Ileus Due to Gall-stones.—The observations made in this condition are, when the great frequency of cholelithiasis is considered, still too incomplete to warrant a solution of the question as to whether an expectant treatment or surgical interference offers the better chance for the patient. As neither the size of the gall-stone nor the length of time it may have been present in the intestine appears as the invariable cause of the ileus, interest centers in the circumstances which constitute the immediate reasons for the attack, and their diagnostic features. From a clinical study of his cases KARZWSKI (Deut. med. Woch., Mch. 20, 1902) finds that patients who had apparently no previous cholelithiasis or had made a complete recovery, as well as those subject continuously to biliary colic, could be suddenly affected with acute intestinal occlusion due to the presence of a biliary calculus. The latter in its passage through the canal may at times become closely grasped by the gut, so that an attack of well-marked ileus is followed by a period of complete immunity from

symptoms. The stone may be passed without creating any further damage or it may cause perforation with the consequent results. These phenomena form a series of varying clinical pictures difficult of diagnosis. As the ileus is caused by the presence in the gut of large moving stones, the question remains as to the manner of their getting into the intestinal tract without having caused symptoms. It is found that such large stones pass directly into the duodenum through an area of peritoneal adhesions between the gall-bladder and the gut with only indefinite pains and digestive disturbances, which in women are often diagnosed as hysterical complaints when in reality they are signs of a chronic cholecystitis and a circumscribed peritonitis. The mere presence of a large gall-stone in the gut is not, however, an exciting cause for an intestinal obstruction without other contributing factors. Among the latter one may include those frequent peritoneal changes in the neighborhood of the stone, whereas the intestinal wall itself may be free from any trouble or later become sufficiently damaged to permit the egress of bacteria. Peritonitis results, with an accompanying intestinal paralysis which completes the condition of ileus. Peritonitis is, however, not always necessary to call forth this disturbance of peristalsis, which may be entirely reflex to a condition in some other part of the tract. The variety of these phenomena therefore makes a differential diagnosis difficult. An important feature in these cases is early fecal vomiting without much impairment of the general condition, which is in marked contrast to the great prostration of volvulus and other intestinal constrictions. Age (sixty and over) and sex (greater in women) are also to be considered. Pains, although colicky at intervals of several hours, are usually circumscribed. Distention is not marked; when the lesion is high, the abdomen may even be retracted. Pulse is fairly good. These are early symptoms and if unrelieved are succeeded by the signs of peritonitis and complete obstruction. Onward progress of the stone may cause relief of symptoms with a return later on. Although the author advises a trial of medical measures, he advocates early operative interference if no immediate good result be obtained.

Spontaneous Dislocations in Infections.—A contribution to the scanty literature of this subject is made by A. POLI (Gazz. degli Osped., Mch. 9, 1902) in a report of spontaneous luxation of the femur in a typhoid patient. The case was that of a child of five years in whom the disease had run a severe course, with serious cerebral and intestinal symptoms, and was further complicated by gangrenous ulceration in the anal region, and dental caries, with necrosis of the lower jaw. The condition of extreme lowered vitality indicated by the last-named conditions is believed to be responsible for a relaxation of the fibrous ring encircling the acetabulum, thus allowing the head of the femur to slip from its socket when the child was moved, the round ligament, owing to diminished resistance, being ruptured at the same time. There was no evidence of purulent exudation in the joint. A complete cure was effected by immobilization and traction after the joint was set.

Hemorrhoids.—The operative method employed by Halsted of Johns Hopkins in cases of somewhat extensive hemorrhoids is described by NASSAU (Medicine, Apr., 1902), one of his former house-surgeons. The operation is done either under local or general anesthesia. The first step in the operation is a slight stretching of the sphincter, which should not, however, be carried to the point of paralyzing the muscle. The upper bowel is then excluded from the field by means of a gauze tampon introduced through a speculum. The incision is circular and runs just within the margin of the skin; it includes ordinarily more than one-half of the anal circumference, and is carried down to the fibers of the external sphincter. The inner layers are then carefully stripped away from the external sphincter, and the dissection is carried well above the pile-bearing area. During this part of the procedure, the index finger is held in the rectum. All bleeding points are caught, and every clamp is tied before the next step of the operation is begun. Three interrupted subcutaneous sutures of silk are now placed in position to anchor the bowel to the skin. The stitches do not puncture the mucous membrane. The hemorrhoidal area is now cut away by a transverse incision, the severed vessels being caught. Finally, the skin and mucous membranes are closely approximated by interrupted sutures of fine silk. The bowels are moved on the fourth day, the patient gets up on the sixth, and is discharged on the tenth. The advantages of this mode of procedure are summarized as follows: (1) The sphincter is not injuriously dilated; (2) the wound is not open to infection from the bowel; (3) the blood-supply to the pile-bearing area is obliterated; (4) little, and in some cases no, tissue is excised; (5) healing is rapid; (6) recurrence is a rarity; (7) secondary hemorrhage and stitch-abscesses do not occur.

Ether Narcosis.—American surgeons, who have so generally adopted ether as the best anesthetic, should be interested in the following conclusions of CAMPICHE (Rev. Med. de la Suisse Rom., February, 1902), who worked in Roux's clinic. He analyzed 745 operations of every kind, of which 511 were performed under ether, 205 under chloroform, 21 under mixed narcosis, and 8 (goiters) without narcosis. The previous and subsequent conditions of heart and lungs were carefully investigated and tabulated. Campiche found that (1) ether is a specific irritant for lungs and bronchi, and is, therefore, absolutely contraindicated in all diseases of these organs; (2 and 3) even though this rule be respected, however, a certain number of accidents will be encountered; pneumonias occur more often after chloroform than after ether in individuals with sound lungs; (4) the unfortunate after-effects of many operations are attributable not to the anesthetic, but to the impaired vitality of some of the principal organs of the patient; (5) operations which especially predispose to pulmonary complications are herniotomy, laparotomy, and strumectomy; (6) ether is preferable to chloroform for three very cogent reasons, *viz.*, the after-effects are less dangerous; there is less danger of heart collapse; there is a far greater "margin of safety," by which is meant that the limit of safety is considerably beyond the point at which the narcotizer has induced surgical anesthesia.

Imperforate Anus.—Whenever these cases are encountered the medical attendant should examine for a fistula between the rectum or its representative and the genito-urinary organs, especially in female children. The following brief notes of such a case corroborate this view and are given by B. C. STEVENS (Lancet, Mch. 22, 1902). The child presented all the symptoms of intestinal obstruction and failing strength. He made an incision in the perineum and searched in vain for the bowel. While making an examination of the vagina he discovered high up in this passage signs of meconium and, on further search, a small sinus extending upward and backward into the rectum. A probe was passed in and then a curved artery clamp, by means of which the bowel was brought down into the perineal wound, opened and stitched to the skin there. The child was neglected by its parents and the ignorant midwife and died in the absence of the operator a few days later. The examination of the vagina in this case obviated the necessity of a colostomy, which is to be avoided

whenever practicable. The rule to examine the genito-urinary apparatus before proceeding to such a step is certainly most excellent.

Diabetes and Operation.—The desirability of operating in cases of diabetes has been doubted, except as a last resort to save life. W. G. SPENCER (Lancet, Mch. 22, 1902) contends that the rule should apply only to acute diabetes and not to chronic cases and cites the following example in support of his opinion: A woman, aged sixty-one years, admitted November 8, 1901, discharged March 8, 1902, with a weight of one hundred and fifty-two pounds, twenty years before had weighed two hundred sixty-six pounds and seven years ago two hundred sixteen pounds. The diabetes appeared twelve years ago, with thirst as the chief symptom, but during the last five years has been moderate in its symptoms. October 1, 1901, a small crack appeared at the side of the second toe-nail of the right foot and moist gangrene followed with the formation of sinuses and extensive necrosis. There was no pulsation in the limb below Scarpa's triangle. For five weeks medical treatment with special diet and codeine was given and the leg was frequently dressed. The necrosis extended, but the temperature remained normal. On two days, November 28th and December 13th, there was no sugar in the urine. On December 17th amputation at the middle of the thigh was done, a little sloughing of the skin-flap occurred, but the recovery of the patient was good. Sugar was present in the urine up to January 10th; it was absent after that. On March 8th she was discharged with only a small granulating wound in the thigh. The chronic course of this case is the significant factor in every probability in the success of a major operation.

Restoration of Sphincter Ani.—A new method of making a sphincter ani after the natural one has been almost entirely removed is described by C. H. CHETWOOD (Med. Rec., Apr. 5, 1902). The patient had been unsuccessfully operated upon seven or eight times after having the sphincter almost entirely torn away by being gored by a steer. There was complete incontinence of feces. A large semicircular incision was made with its convexity toward the coccyx and extending just beyond it and from a point about one inch in front of the anterior limit of the anus and on a line, externally, with the tuberosity of the ischium on one side to a similar point on the other. The fatty tissue was dissected out after this flap was turned down and the rectum exposed. The gluteus maximus was freed and a ribbon-shaped piece of muscular tissue, one-fourth of an inch in breadth and one-sixteenth of an inch in thickness was dissected from the gluteus muscle on either side, leaving the attachment to the coccyx. These bands were then transposed so that the fibers would decussate with one another around the rectum and were sutured in front. After one year the patient is able to hold even liquid feces.

A New Deep Suture.—Sutures protecting the abdominal wall are of interest. S. L. WOOMER (Lancet, Mch. 29, 1902) presents the following: A long piece of silkwormgut is threaded on a double needle and the first insertion is made at the bottom of the wound, including the peritoneal fat and the peritoneum. The needle is then carried across the peritoneal section and made to emerge in the subperitoneal fat of the other side at a point opposite that of its first entrance. Thence it is carried across the wound and made to penetrate the two layers of the aponeurosis within the rectus muscle. The other needle is now made to embrace the opposite side and is then crossed to penetrate the integument. The suture is completed with the first needle, which issues from the skin on the opposite side, thus producing a double figure-of-eight arrangement. The suture is tightened with a slight rocking movement and tied in the ordinary manner. In order to effect its removal the silkwormgut is pulled upon on one side of the knot and then cut close. Thereupon it recedes within the skin. Slight traction upon the knot is then necessary to withdraw it. It will thus be seen that one can obtain a perfect apposition of a deep wound without any of the disadvantages which accompany a permanent buried suture.

Appendicitis.—The tip of the appendix, if the organ be long enough or the cecum unduly movable, may reach remote points of the abdominal cavity. J. H. GALTON (Lancet, Mch. 29, 1902) reports a case of appendicitis in which the organ was lodged in and adherent to the femoral canal. The tenderness was limited practically to McBurney's point, but an incision four inches long was made parallel to Poupart's ligament and one and one-half inches above it. The head of the colon was found adherent to the anterior abdominal wall just below the incision. The appendix was found with difficulty; it was bound down by a strong meso-appendix adherent throughout its entire length to the posterior wall of the abdomen and dipping down for a quarter of an inch into the femoral canal. A strong and old adhesion also bound it to the ileum. The organ was finally traced down to the femoral canal, to which its tip was adherent.

X-ray Treatment.—The increasing use of the Roentgen rays in modern therapeutics has brought forth innumerable reports of cases treated by this means. W. A. PUSEY (Jour. Amer. Med. Assoc., Apr. 12, 1902) reports a mixed series of thirty-six cases with varying degrees of successful results. They include lupus, epithelioma, carcinoma of the breast, neck, and hand; also abdominal cavity, sarcoma, keloids, pseudoleucemia, leucemia. The majority were considered hopeless, and, even if not cured, a stay in their progress seems of sufficient importance. The rays evidently have a destructive effect on the tisues of low vitality, and the author's sections show that they cause a degeneration of carcinomatous tissue and a disappearance of this degenerative substance, presumably by absorption. The formation of firm, healthy scar tissue follows. A similar process occurs apparently in lupus, sarcoma, and pseudoleucemia. The advantages of the method are as follows: (1) It is painless; (2) it destroys diseased tissues, but leaves the healthy tissue undisturbed; (3) it leaves small scars; (4) it can be used in places where the surrounding healthy tissue cannot be sacrificed, *e.g.*, about the eye and nose; (5) it is applicable to many inoperable cases; (6) it often relieves pain. The author restricts the use of the X-ray and does not advise it as a substitute for operations in the operable malignant growths. In cutaneous lesions it is, however, recommended as a primary method of treatment. Its use thus far warrants the following: (1) In all cases of malignant disease which have been operated on there is reason to urge the subsquent use of X-rays as a prophylactic measure. (2) In all inoperable cases of malignancy the method should be tried, even if it only relieve pain and inhibit the progress of the disease. The author has had least success in internal neoplasms and none in a case of leucemia. A rapidly-growing round-cell sarcoma subsided quickly. The best results were obtained in epithelioma and lupus.

Acute Appendicitis.—Appendicitis is such a protean disease and its symptoms and physical signs are so misleading at times that most men are satisfied if they are able to make a diagnosis and determine the indications for operation. The greatest success will not be reached, however, till one is able more definitely to prognosticate the actual situation and condition of the affected parts. C. A. ELSBERG (Med. Rec., Apr. 5, 1902)

has given a few points which may be helpful to the diagnostician. A knowledge of the position of the diseased organ may influence the prognosis and the urgency for operation. When the appendix is behind the cecum an inflammation is more liable to be walled in and the danger is less, especially in adults. An appendix internal to the colon is dangerous on account of the early invasion of the peritoneal cavity. When a tumor cannot be felt he believes that much information can be obtained by certain signs. Some writers claim that the organ lies beneath the point where there is the greatest tenderness, but after locating the organ by this method the author has frequently found the appendix at some distance. He now takes McBurney's point as the base of the appendix and then asks the patient to point as quickly as possible without looking at it to the spot on the abdomen where he has the greatest pain. He should be made to repeat the procedure several times, till one is sure he is correct. A line joining these two points should locate the position of the appendix. This method has been successful in a large majority of cases, but cannot be employed till the pain becomes localized nor after general peritonitis has developed. A mass in the right iliac region in appendicitis generally means that the inflammation has extended beyond the appendix. Either there is an abscess or a mass of adhesions around the organ. If the mass be soft and tympanitic, it is probably a mass of intestines with a small abscess, perhaps in the center. Large abscesses may be recognized by their characteristic feel and immobility. An exudate which persists longer than two or three days without diminishing in size, or which is increasing in size, always contains pus as its nucleus. A large abscess may persist for weeks, however, without causing further trouble. In regard to the diagnosis of a general peritonitis, besides the usual signs, the author is inclined to lay especial stress upon the rigidity of the abdominal muscles, particularly of the left rectus in addition to that of the right. This rigidity is frequently present before the pulse has begun to rise. It is a rigidity that does not disappear under the influence of narcotics, but only under deep anesthesia. It almost always means a beginning general peritonitis.

Gall-bladder Disease and Appendicitis.—It is extremely difficult at times to differentiate between these two conditions, for the signs and symptoms may be very deceiving. J. C. KENNEDY (N. Y. Med. Jour., Apr. 5, 1902) reports the case of a patient who gave no previous history of similar trouble, but who had a sudden attack of pain, severe and persistent in character, at first diffuse, later localizing at the right iliac region. He had considerable vomiting, some constipation, no jaundice and a moderate temperature. Appendicitis was diagnosed, but operation showed the presence of a large calculus in the cystic duct. Another patient gave a previous history of gall-stone colic and had a sudden attack of severe pain in the right hypochondrium, with tympanites and tenderness of abdomen soon developing, and a mass palpable high up underneath the ribs. Operation showed it to be a case of general peritonitis secondary to rupture of the appendix. The author says that in these doubtful cases it is perhaps best to begin the incision half way between the two sites and subsequently extend it in the required direction.

Gangrenous Appendicitis.—A fatal case of this treacherous disease is reported by S. M. EVANS (Med. Rec., Mch. 29, 1902) to show that none of the cardinal symptoms may appear to arouse one's suspicions of a peritoneal cause. The case was that of a girl, nine years old, who gradually developed the symptoms of a toxemia, with vomiting and diarrhea at the beginning; every twenty-four hours marked a decided advance in the pulse and toxemia, the temperature remaining practically negative till thirty hours before death. Examinations by Drs. Bull, Janeway, Winters, and Holt failed to disclose any cause for the toxemia. He suggests, therefore, that in the presence of constitutional symptoms of toxemia, the source of which cannot be found, if the merest suspicion of abdominal involvement exist, it ought to be justifiable to make an exploratory incision.

Total Obstructive Urinary Suppression.—Cases of obstructive suppression are of peculiar interest (1) from their rarity; (2) from the "latency" of the symptoms produced; (3) from the good results to be anticipated from operative intervention; (4) from the light which they throw upon the pathology of uremia and on the functions of the kidney. Thus interestingly W. MITCHELL STEVENS (Brit. Med. Jour., Mch. 22, 1902) introduces an article and reports a case. The points of particular interest center on the following facts: (*a*) There was a history of prolonged and well-marked glycosuria. (*b*) A very short history of symptoms leading to renal calculus. Three months before death there was absolutely nothing to suggest kidney lesion of any kind. (*c*) The onset of total suppression of urine without symptoms of renal colic. (*d*) The suppression was *absolute*. Not a drop of urine was passed from April 5th until the patient's death on April 12th. In most recorded cases of obstructive suppression small quantities of pale urine have been passed; indeed, it was pointed out by the late Sir William Roberts that this is a condition characteristic of "obstruction." (*e*) The absence of uremia; seven days passed without the elimination by the kidneys of a single grain of urea, yet there was not a single symptom pointing to uremia. (*f*) The duration of life. In this case it was seven days. Roberts states that it is as a rule from nine to eleven days. It is possible that had this patient lived longer, symptoms of uremia might have developed, but they are not the general rule in such cases. The autopsy showed dilatation of the pelvis of the right kidney with atrophy of the organ, proving that at an early period it had ceased, through blocking of the ureter, to perform its function. The left organ had undergone the usual compensatory enlargement and had up to the time of the blocking of its ureter done all necessary work. The stone which blocked the ureter, while small, was large compared with one reported by Sir W. Roberts, which weighed but gr. 1⅓. That so small a concretion should be the direct cause of death is remarkable. The pelvis, here was not in the least dilated—a fact which shows that more time than seven days is necessary for its accomplishment and that, inasmuch as but a few drops of pale urine were found, the pressure necessary to stop the secretion is very slight. Self-evidently, the treatment of this condition is operative as soon as a diagnosis is established, albeit there are some cases of spontaneous recovery reported, in one of which were passed twelve pints of urine within a very short time after the stone found its way to the bladder. It must not be forgotten that ninety per cent. of all cases of obstruction are due to stone and that lodgment of a calculus does not by any means always cause pain. It is evident from a study of this and of cases parallel to it that uremia in no way depends on an accumulation in the blood and tissues of excretory products which are normally excreted by the urine. There is an important difference in the pathology of the two conditions, called "obstruction" and "non-obstruction" suppression. In the first the kidneys are normal; in the second they are abnormal. Does not this suggest that there is a very important function of the kidney quite aside and apart from excreting? When a case of nephritis advances to the stage of suppression the other functions of the

kidney are also in abeyance. If a stone plug the ureter of a healthy organ, on the other hand, the excretory function alone is stopped. Thus one can conceive that the kidney has a double function—that of creating an "internal secretion" as well as playing the rôle with which one is familiar. Is not the organ, like many others, "secretory," as well as "excretory"?

Surgical Treatment for Puerperal Pyemia.—For that form of sepsis after childbirth which depends upon infected emboli carried from the thrombosed pelvic vein, F. TRENDELENBURG (Münch. med. Woch., Apr. 1, 1902) advises surgical interference similar to that for sinus thrombosis, namely, the tying of the infected vessels. The operation is much more difficult, since not one, but several vessels are involved and since generally both sides are affected. The veins which have to be considered chiefly are the spermatic and the hypogastric. The latter can be reached extraperitoneally by an incision, a finger's breadth above Poupart's ligament, beginning in the line of the epigastric artery and ending four or five centimeters mesinal to the anterior-superior spine. For the spermatic vein, the incision is prolonged to the tip of the eleventh rib, with the patient in the lateral position, and the ureter sought for; the thrombosed and much thickened vessel will usually be found in close proximity. The laxity of the abdominal walls found after pregnancy renders the operation very easy. In recent cases the thrombi may be removed; in older ones the simple ligation must suffice on account of the danger of opening the peritoneum after an extensive dissection. The indication is always to operate as early as possible and, though a single chill may not definitely decide the diagnosis, a repetition leaves hardly any room for doubt as to the condition. Concerning the question as to which side is to be operated upon, the bimanual examination must determine where the greatest tenderness on pressure is to be found. In over half the cases observed, both sides were affected and in doubtful instances all the vessels should be tied.

Nature of Urethral Fever.—In all cases of urethral fever coming under notice, R. BERTELSMANN and D. MAU (Münch. med. Woch., Apr. 7, 1902) have systematically made bacteriological examinations of the blood. In most the results were positive and the staphylococcus proteus and the colon bacillies were found pure or in combination, generally in large numbers. It is probable that the germs gain their entrance into the blood through some tear of the mucous membrane. It is difficult to explain their abundance, since a multiplication is said not to occur in the circulating blood, and it seems likely that they first increase in the stagnant veins about the posterior urethra. The fact that the decomposing urine is pressed forcibly into the wounded surface owing to the arterior obstruction generally present also predisposes. The rapid defervescence of so many cases may be due to a low virulence and rapid excretion and the inability of the germs to find a *locus minoris resistentiæ*. In all the cases here reported the same bacteria that occurred in the blood were found in the urine. In the rare cases in which cultures were negative, it may be assumed that the ordinary media were insufficient for their propagation. The lesson to be drawn is to avoid frequent sounding and catheterization and to excise the stricture as soon as the patient's condition permits.

Foreign Bodies in the Skull and Their Discovery by the X-ray.—The medical world has recovered from the wave of enthusiasm with which the X-ray was heralded and received as a means of diagnosis and is now soberly setting itself to discover and record its advantages and disadvantages, dangers and limitations. From time to time various authors present ingenious, more or less accurate means of calculating the distance of foreign bodies from the surface and from well-known deep landmarks. The skull has been quite a large field of activity in this regard, and any means of arriving at the necessary information directly without resorting to mathematics is suggestive and may be worthy of permanent use. H. STAMM (Ctlblt. f. Chir., 1902, No. 12) elucidates the following ingenious procedure by which he located a bullet in the brain with all the accuracy essential to good surgery. The details of the methods are briefly these: A strip of soft sheet lead was cut, say, two centimeters wide and long enough to reach from the root of the nose to the nape of the neck. At regular intervals, which he made one centimeter, the strip was studded with flat-headed nails, vertically, and secured in position with wax. The strip was then applied to the skull in the middle line from the root of the nose to the nape of the neck and secured with bandages from the forehead to the occiput. A radiograph was now taken in such a position that the plate was nearly as possible parallel with the row of nails. The bullet was seen to be beneath the interval between the twenty-third and twenty-fourth nails, slightly projected toward the interior of the skull. This place was suitably marked on the skin and then the strip was removed and placed over this point parallel with the coronal plane of the body. Another radiograph was now taken and the bullet was found to be under the ninth nail, similarly projected a short distance toward the center of the skull. This second point was therefore marked as representing on the surface of the skull practically the exact position of the bullet. A small skin and bone flap was made above it and the bullet found exactly where it was indicated. These two pictures are the only ones necessary if the foreign body be near the surface. If, however, it be deeply placed, for example, in the neighborhood of the temporal lobe, a third radiograph is necessary, with the strip of nails horizontally placed corresponding as nearly as possible with the level of the body, as indicated in the first two pictures. The three planes of projection thus obtained will locate any foreign body with the smallest possible chance of error and without the delay of mathematical computations.

Temporary Carotid Closure.—The essential life of certain parts of the body has long ago been known to outlast brief cutting off of the blood, but it is only recently that this has been attempted in connection with the brain. G. CRILE (Annals of Surgery, Apr., 1902) gives an experimental and clinical research of the temporary closure of the carotid arteries. His physiological observation is as follows: The immediate effect of temporarily closing one of the arteries was to increase the blood-pressure, but the usual compensation followed and the normal level was restored. There was no effect upon the respiration. Simultaneous closure of both carotid arteries produced a greater rise in the pressure, which by compensation, however, seemed to return to the normal and a slight decrease in the respiratory action was noted. In no instance was there any striking result. In the recovery experiments in which the clamps were allowed to remain on the arteries and in which the wound pursued an aseptic course, no effect upon the normal, and a slight decrease in the respiratory to the anesthesia. The animals seemed playful and strong. Even after twenty-four hours of complete closure there was not much gross evidence of injury to the vessel wall. The circulation through the clamped portion was readily reestablished. If, however, the clamps were applied, say, for two days and infection occurred then the lumen of the vessels sometimes remained closed. As to the after-effects, in no case was any noted. The aseptic cases made good recoveries. Circulation was reestablished and no impairment of consequence

was observed. In the brain after death no changes were found, neither emboli nor thrombi. The most convenient, accurate and safe clamp seemed to be one operated by a set-screw. One blade is longer than the other and turned up at one end so as to prevent the artery from slipping out. Over the blades rubber tubing is drawn to minimize the pressure on the vessel-walls. In applying the same it is necessary to bear in mind that the blades need only to be approximated, not pressed. The adjustable screw gives so perfect a mechanical control of the lumen of the vessels as to enable the surgeon to perform the operation and secure the bleeding vessels with a minimum loss of blood. He suggests the following clinical applications: Twenty minutes previous to making the incision, $^1/_{100}$ of a grain of atropine should be given, when the trunks of the vagi and their superior laryngeal branches are likely to be involved, for the purpose of preventing possible inhibitory action. Each common carotid artery is then closed by means of a small clamp, like the above. When blood might enter tne respiratory track, the patient should be placed in the Trendelenburg posture. This partially compensates for the lowered cerebral blood-pressure. While this posture does increase the venous and capillary hemorrhage, the increase of the venous pressure diminishes the danger of the entrance of air into the larger venous trunks should they be accidentally injured. Such hemorrhage is relatively of little consequence unless from the larger veins. After the operation, if the Trendelenburg posture has been employed, it is safer to restore the patient to the horizontal position before removing the clamps, because after taking off the clamps the blood-pressure rises and this effect should not be augmented by the position. The control of the arterial hemorrhage is absolute, except in such vessels as receive direct collateral circulation from the vertebral arteries. According to the researches of Bayless and Starling there are no vasomotor nerves supplied to the vessels of the brain. The circulation is largely mechanical. The blood-vessels of the brain should therefore be more amenable to the employment of such technic than the vessels of almost any other organ of the body in which the blood-supply is more or less regulated by the vasomotor mechanism.

Stereoscopic Radiography.—The advantages of looking at pictures stereoscopically are several. A single X-ray plate shows the shadow on one plane, and thus the true relation of points in the other planes is lost. In order, therefore, to determine the position of a foreign body, photographs must be taken in the other planes, usually two at right angles to each other. From these by measurement and calculations a fair degree of localization may be obtained. A stereoscopic plate on the other hand is apt to give at one view a very good idea of all these factors. A. B. JOHNSON (Annals of Surgery, Apr., 1902) describes minutely a most beautifully equipped table for such purposes. Those who desire to construct a special table must study out his details, but those who cannot afford it may under his recommendations adopt the following plan: Upon a framework of planking, two feet long and as wide as the table which is to be used for taking radiographs, are nailed two little cleats ¼ inch high, running crosswise from one side of the planking to the other, separated by a little greater distance than the width of the envelope enclosing the size of photographic plate which the operator will use. Across the top from one strip of wood to another is tacked a sheet of fiber paper, as it is called. A shallow, wooden draw or plate-carrier is made of such a size and depth that it slides easily in and out between the strips of wood and beneath the fiber cover. The part of the body to be photographed is placed upon the fiber covering and the plate in its envelope is pushed beneath it in the drawer. A picture having been taken, the drawer is pulled out, the plate removed and a new one inserted beneath the part to be photographed and a second picture is taken. Sometimes it is necessary and usually it is wise to hold the part pictured absolutely quiet by strips of adhesive plaster stuck to the skin and to the table. The tube must of course be moved 2½ inches horizontally or vertically, according to the point from which the photograph is taken (which distance represents that between the two eyes of the average person) before the second photograph is made. The two photographs, each produced from its own point, 2½ inches apart, will constitute the stereoscopic view of the patient. The Wheatstone Reflecting Stereoscope is, in Johnson's opinion, a very serviceable means of examining the photograph obtained.

Treatment of Ascites.—Surgical interference in this condition when due to hepatic cirrhosis is commented on by H. KÜMMELL (Deut. med. Woch., Apr. 3, 1902). He reports a series of seven cases in which Talma's operation was done. This consists of relieving the portal congestion by suturing the omentum or even the liver to the anterior abdominal wall, in order to form a new collateral circulation. The author does not consider of importance the usual contraindications, *i. e.*, icterus, acholia or hypercholia of the feces, nonfunctionating liver cells, but even in advanced cases advocates the operation as a palliative measure. In three of his cases there was no return of the ascites; the remainder were relieved for a time but were fatal later from exhaustion or intercurrent disease. In cases in which autopsy was performed, a cure of the cirrhosis itself was not in evidence, but the establishment of a collateral circulation as a relief measure is sufficient, the author claims, to warrant the operation in every suitable case.

Jejunostomy in Contraction of the Stomach.—Two cases of marked contraction of the stomach came under the observation of M. VON CACKOVIC (Arch. f. klin. Chir., Bd. 65, S. 409). This writer doubts the existence of idiopathic cirrhosis of the stomach. Cases of marked contraction are regarded as invariably due to diffuse carcinoma of the gastric wall, or to inflammation resulting from localized carcinoma. The patient can take only small quantities of food, frequently vomits even these, has constant pain and is rapidly emaciating. The stomach cannot usually be made out either by percussion or by palpation. The stomach-tube meets with resistance after passing fifty centimeters or less beyond the teeth; only a small quantity of food can be introduced through the tube. The presence of adhesions or metastases usually negatives total extirpation of the stomach, rendering this, the only radical treatment, either impossible or useless. Gastro-enterostomy cannot be performed without a healthy stomach-wall; hence, jejunostomy alone remains, and is to be performed when the disease has not advanced so far that all operative procedure is hopeless.

Undescended Testicle.—The advisability of scrotal transplantation in this condition has long been a matter for controversy; many claiming that an undescended testicle, both before and after puberty, is atrophic and functionless and also liable to inflammation or degeneration at a later date. A series of five successfully operated cases is recorded by J. WOLFF (Deut. med. Woch., Apr. 3, 1902), all of which were marked by severe symptoms, and the good results obtained lead him to advance conclusions differing from those usually accepted. It is usually conceded that the symptoms attendant on cryptorchism can be relieved by transplantation as well as by extirpation, and that the mental effect of the former on the patient is of great moment,

yet it is urged against the conservative operation that the transplanted testicle is subjected to irritation and liable to inflammation and may, moreover, become the seat of malignant disease. The author's patients have been subjected to severe physical strain since the operations (six to nine years) without evil results. The direct origin of malignant neoplasms from transplanted testicles has never been substantiated. The theory of malignancy was deduced from the finding of hyperplastic connective tissue in the atrophied organs. It is probably more correct to believe that the tendency toward the formation of neoplasms is dependent on the irritation to which the testicle is subjected in its unnatural attitude and these conditions are done away with when the organ is fixed in a protected position in the scrotum. The author also finds that growth of the testicle *does* take place after transplantation. This operation should be done early, before any complicating symptoms have appeared, in all iliac or inguinal retentions, independent of herniæ or inflammatory conditions, and extirpation should be limited to those cases in which a malignant growth is present or is developing. The indications for extirpation of a retained testicle should not vary from those for the organ normally placed.

Hemostasis in Wounds of the Liver.—After a detailed description of three successfully-treated hepatic wounds, V. MARTINELLI (La Riforma Medica, Mch. 24, 25, and 26, 1902) reviews the numerous measures which have been employed for checking hemorrhage in such cases, concluding that the best method in punctured or incised wounds is immediate suturing of the liver. The objection that suturing, from the friable nature of the hepatic tissue, causes further injury through tearing and consequent increased loss of blood, is met by the statement that these dangers may be avoided by inserting the stitches some distance from the margins of the wound and by avoiding excessive tension. When, however, wounds are very extensive, or involve one of the large vessels, the author holds that suturing is too slow of execution and in these cases, as well as in wounds from firearms, the tampon is to be preferred, the most important ends sought being speedy hemostosis and prevention of infection. As to operative methods, the author prefers, for wounds from firearms, that of Micheli, as affording the best view of the surrounding organs, thus facilitating the search for secondary wounds. This consists in two incisions starting from the lower border of the fifth rib, the first beginning in the parasternal line, the second in the anterior axillary, both being carried down to the free border of the ribs, from this point converging to meet at a point four centimeters below the border; thence a single incision passes down the abdomen. The underlying ribs are resected and the peritoneum is incised. An operation performed upon the cadaver by Guidone is described, which seems to fulfil the conditions embraced in Micheli's method and has advantages over the latter in that it is more rapid and the pleura and diaphragm are spared. In this operation the first incision starts from the superior margin of the seventh cartilage and is carried down to the costal border; from this point, a transverse incision is made through the tenth intercostal space, passing back to the posterior axillary line. For punctured wounds, the costo-albo-abdominal method devised by the author is preferred. This consists of two incisions, one vertical, passing down from a point a finger's breadth external to the ensiform appendix, the second beginning at the same point and following the outline of the costal border at a distance of two centimeters from it. This gives a triangular, musculocutaneous flap which affords a full view of the left lobe of the liver and of part of the anterior and superior surface of the right; and if slight traction of the liver be exercised, the costal border being raised at the same time, the highest part of that organ may be seen. This operation has the great advantages of simplicity and rapidity. Statistics are quoted showing that surgical intervention has reduced mortality in punctured and incised wounds of the liver one-half; though in wounds produced by firearms the death-rate seems to be unchanged by operatve measures.

Prostatectomy.—Many of the ills of life would be avoided by the removal of the prostate gland when enlarged. PARKER SYMS (Annals of Surgery, Apr., 1902) shows an instrument called the bladder retractor for perineal prostatectomy. With its use the operation is performed as follows: The patient is placed in the lithotomy position under ether narcosis. A median perineal section is made extending from the bulbous portion of the urethra as far back as is safe without injuring the rectum. The membranous urethra is exposed by dissecting backward until the tube of the prostate is reached. An opening one inch in length is made in the membranous urethra. A staff is introduced into the bladder and the bladder is now carefully irrigated, and then the rubber retractor collapsed is introduced through this opening into the membranous urethra so that the bulb is well within the bladder. Then this bulb is dilated to a diameter of two and one-half inches and the tube connected with it is clamped with artery forceps to prevent the escape of the water. Firm traction can be made on this tube, whereby the neck of the bladder and the prostate gland around it are brought downward into view and reached, whereby removal is made much more easy.

Spinabifida in Adult Life.—This is a condition which one is accustomed to see in childhood, as the patient rarely reaches adult life. F. F. WHITE (Lancet, Apr. 5, 1902) reports a case in which he operated on a married woman, twenty-seven years old. After the deformity had ruptured during childbirth, considerable cerebrospinal fluid escaped, causing great pain in the head and lower extremeties. The usual operation was promptly done and recovery followed.

MEDICINE.

Carcinomatous Pleuritis.—Four cases of carcinomatous pleuritis are reported by N. D. TROW (Practichesky Vratch, N. Y., 1902). In two of the patients the lesion was primary and in the other two metastatic. The exudate was in all cases serous or bloody. The most characteristic clinical symptoms in these cases are in his opinion very rapid filling of the pleural cavity after paracentesis, very severe pain even when the cavity is full of fluid, which is not the case in rheumatic or tuberculous pleuritis, and absence of fever.

Banti's Disease.—In an extensive article on this affection, DR. GRUSDEFF (Russky Vratch, 8, 9, 10, 1902) gives a review of the literature on the subject and also relates histories of three cases observed by himself. He thinks that sufficient attention has so far not been paid to this disease and that it is most probably more frequent than was thought at first. The early recognition of the disease is of greatest importance, as the outcome of it is absolutely fatal, unless the proper treatment—splenectomy—be resorted to in time. The author concurs with Prof. Senator in the opinion that a number of cases of cirrhosis of the liver of an undefined character, in which jaundice, dropsy, tumor of the spleen and hemorrhagic diathesis are combined, are probably cases of Banti's disease.

Newer Synthetic Remedies.—In his review of the newer remedies of 1901 DR. EICHENGRUEN (Zeitschr. f. angew. Chemie, 10, 217) criticizes the action of some medical journals in devoting space and wasting ink on the worthless recommendations of patent nostrums by

certain physicians of repute, citing as example a so-called new remedy for baldness which a certain medical authority claims to consist of an extract of six different barks and roots in which sterilized whey is the solvent, to which are added borax, alum, glycerin, salicylic acid, lactic acid and sodium bicarbonate. In addition to this chemical nonsense, the physician claims that the temperature of combination must be carefully regulated in order to secure a preparation of *constant therapeutic* action. The doctor further adds, "If such preparations reach the limits allowable among proprietary nostrums, there are others which far excel this class and must be publicly denounced as swindles. To this class belong the *diabetic* remedy of Rahmer of Cassel called Musol, which consists solely of salol; differing only in price are the so-called harmless American synthetics sailing under false colors. For obvious reasons, the American inventor has always laid much stress on the cheapness of his products which were sold at extortionate prices. "Among the newer antipyretics examined by myself was Thermol, in which the cheapest of all remedies, acetanilid (40c. per kilogram), was *not* the most expensive ingredient." This new preparation, which is erroneously denominated as a synthetic alkaloid of the incorrect formula $C_{18}H_{18}NO_3$, consists, he says, entirely of an impure phenacetin.

Accidental Vaccination of the Nipple.—As a source of puzzling infection of the nipple and breast, vaccination must not be forgotten. F. SPURR (Lancet, Mch. 29, 1902) relates the following: The woman was thirty-four years old, and had had four children, feeding them all at the breast and suffering greatly from cracked nipples. All four children were vaccinated at the same time, while the youngest was two months old. The youngest child had a severe reaction, requiring treatment by the mother under the physician's orders, which she misunderstood and instead of washing her hands carefully had been in the habit of nursing the child at once. The result was that she inoculated one of the cracked nipples and suffered greatly in consequence.

Thoracic Phthisis.—A little truth is added here and a little there in medicine as in all sciences until the sum total is a large addition to human knowledge. The recent congress on tuberculosis in Great Britain is an example of what may be accomplished by combined efforts along single important lines. F. T. ROBERTS (Lancet, Mch. 29, 1902) gives a comprehensive set of thoracic diseases from which the following may be taken. His etiological classification is especially interesting and comprises the following important heads: Definite infection from without; infection from within (auto-infection); personal inherent predisposition; causes acting on the general system (acquired personal predisposition); external conditions and environment; special causes; local causes (acting more or less directly on the respiratory apparatus); local predisposing morbid conditions; general or remote predisposing diseases; acquired personal predisposition, many of the factors of which are directly avoidable by the patient himself and should be a matter of public knowledge. They are associated immediately with the individual and his mode of life, not only lower his system generally, but render the local structures much less able to resist the pathogenic action of the invading organisms, are too well known among physicians and almost make one despair of producing any marked or lasting effect upon the prevalence of consumption. They are as follows: (1) Insanitary conditions and surroundings, especially overcrowding, habitual want of ventilation, entire absence of sunlight, confinement in used-up or foul atmosphere, uncleanliness, both personal and domestic—in short, all forms of insanitary and unhygienic life. (2) Deficiency of food especially, in young growing subjects; sometimes undue religious fasting may so reduce the system as to make it positively vulnerable. (3) Intemperance and vicious habits of any kind, which tend to reduce the power of resistance. (4) Occupation. (5) Conditions occasioning frequent and more or less constant drain on the system, especially when accompanied by any of the other conditions above. Among these are unduly rapid childbearing, prolonged nursing and menorrhagia. (6) Mental depressing causes of any kind. Excessive work and study, prolonged worry, anxiety, profound grief, melancholia, shock, depression and the like. It is doubtless a fact that a due appreciation of these causes with efforts at removing them when discovered will have some effect upon the sum total of tuberculous cases in the world.

Characteristics of Genuine Vaccinia.—In order that the reputation of vaccination should not be injured by the results of spurious vaccine records, it is necessary to appreciate the characteristics of a successful inoculation. W. M. WELCH and J. F. SCHAMBERG (St. Louis Med. and Surg. Jour., Apr., 1902) describe the typical course of vaccinia and further state that when constitutional symptoms are very slight, as often occurs in the second or third vaccination, there should be no deviation in the development of the pock; that is to say, it should pass through the stages of papulation, vesiculation and pustulation. The raspberry excrescence, when seen, usually appears from three to seven days after vaccination and is utterly devoid of protecting power against either variola or vaccinia. It is quite similar to the papule of vaccination, but never reaches the vesicular stage. It remains hard, dense, bright red in color often for weeks, and is not followed by a scar. Although there has been much evidence urged against the glycerinated lymph, these writers have had excellent results from the lymph furnished by the Philadelphia Health Board. To show the protective value of vaccinia, they state that out of over five hundred cases of smallpox treated at the hospital during 1901 not a single patient had been vaccinated within five years and a majority had never been vaccinated. It is believed that it may be laid down as a rule that if a child be successfully vaccinated in infancy and again at the age of puberty, the protection will be permanent. An exposure to smallpox should, however, demand revaccination.

The Question of White Meat in Nephritis.—At the instigation of Van Noorden, who was clinically unable to differentiate the effects of light meats from those of dark meats in chronic nephritis, KAUFMANN and MOHR (Zeitschr. f. klin. Med., Bd. 44, H. 5) recently undertook anew an examination of the question. These writers declare that neither the albumin-content of the urine nor the total excretion of nitrogen is affected by the substitution of brown meats for white in the diet of nephritic patients. These findings contradict the dogma of the injurious influence of dark meats, and are entirely in accord with the chemical analyses of Offer and Rosenquist and with the clinical observations of Van Noorden.

Polymorphous Erythema in Pneumonia.—This cutaneous manifestation which sometimes appears in the course of croupous pneumonia is generally characterized by circular efflorescence. The spots are circular, of variable size, somewhat raised above the level of the skin, of an intense red, with slight central depression; they do not disappear on pressure; they are symmetrically disposed, and appear usually upon the extensor surface of the limbs. At times the eruption assumes various forms, such as the annular, nodular, or hemorrhagic spots appear, which are more or less indurated and pass through the various chromatic

changes common to subcutaneous hemorrhages. Microscopically, the lesions have been found to consist in an acute, circumscribed inflammation of the skin, which, no specific organism being found to account for it, is presumed to be due to irritation of the vasomotor nerves by toxic substances circulating in the blood, and which are excreted by the skin. G. RECCHI (Gazz. degli Osped., Mch. 19, 1902) reports a case of croupous pneumonia in which this phenomenon appeared at a time when the patient's life was in great danger. As improvement dated from the appearance of the eruption, he believes that it marked the reëstablishment of the defensive powers of the organism by which were eliminated the toxins elaborated by the diplococcus of Fraenkel and other concomitant agents.

Arthritis Due to Varicella.—An infant just recovering from varicella was recently brought to Broca's clinic with a swelling of the right knee, which examination proved to be due to a collection of fluid in the joint. Complete extension of the leg on the thigh was impossible. The temperature of the patient was 39° C. (102.2° F.) Exploratory puncture revealed a cloudy fluid of a greenish tinge. Arthrotomy followed and the joint was drained. The discharge was examined the following day and streptococci were found. The patient's temperature was irregular for several weeks after the operation, marked daily oscillations occurring especially during the third week. Seven weeks after arthrotomy was practised the temperature was normal and the function of the joint was almost completely restored. In connection with the report of this case H. LACASSE (Gaz. hebd. de med. et de chir., Mch. 20, 1902) reviews the literature of arthritis as a complication of varicella. Cases of polyarticular as well as of monoarticular arthritis are described, the former due to general infection, the latter to local. The prognosis does not depend upon the constitutional manifestations, for these may be marked at the onset of a merely serous polyarticular effusion, but rather upon the appearance or non-appearance of pus in the joints.

Urinalysis in Stenosis of the Pylorus.—Exhaustive analysis of the urine of two patients suffering from non-malignant pyloric stenosis disclosed a number of features of interest, to which reference is made by C. A. HERTER and E. K. DUNHAM (N. Y. Univ. Bull. of Med. Sc., Jan., 1902). In one of the cases the stenosis was marked; but little fluid passed into the intestine, and the volume of the urine was greatly diminished, the total for twenty-four hours usually being between 300 and 400 cubic centimeters and rarely exceeding 500 cubic centimeters. In the second case the quantity of urine was only at times below normal; here the stenosis was of a slighter grade. In both cases there was evidence of increased absorption of putrefactive products from the intestine. The indican reaction was exceptionally strong, but diminished in intensity after lavage was begun. In each instance the ethereal sulphates were increased in relation to the preformed sulphates. This relative increase is to be referred to the state of inanition and is commonly found in cases of advanced pyloric stenosis. The quantity of urea excreted daily in one of the two cases was very small. In the other case considerable quantities of nitrogenous food must have been absorbed, since the urea excreted amounted to over twenty grams daily. In both patients the excretion of uric acid was low as compared with the excretion of urea. One of the most characteristic features of inanition is the state of the chlorine excretion; in both patients this was extremely low. The fall of the chlorides in states of absolute or partial inanition is due to the fact that the organism even in starvation always remains saturated with chlorides and excretes only the chlorides in excess of the quantity retained for the uses of the cells and fluids of the body. Evidence was obtained of the excretion of organic acids in the urine of both cases, other than uric and hippuric, which are normally present. Whether the acids excreted were the result of disturbed metabolism, rather than disturbed digestion, is a question the authors are not able to answer.

Photography in the Early Diagnosis of Typhoid.—Some years ago it was shown that smallpox eruptions showed plainly on photographic plates, but shortly after it was demonstrated that ere the plate could register it the eruption could be felt by the examining hand. The same investigator who made these experiments, HENEAGE GIBBES (British Med. Jour., Mch. 22, 1902), now writes that by the use of orthochromatic plates the characteristic typhoidal eruption can be proven present before it can be either seen or felt. The procedure is a simple one. The head and face should be covered and the abdominal region of the patient exposed. A bit of printed matter should be stuck to the skin to help in determining the focus. The most rapid of the orthochromatic plates are used and out of a series of six exposures one should find at least two plates which show the eruption. An assistant should throw light on the abdomen from a mirror. No rule can be laid down to govern the exposure, but if the developing be carried on most carefully a certain amount of variation in exposure can be cared for. A very weak hydrokinon or paramol solution gives the very best results. In making a Widal test, should the reaction be indefinite, an orthochromatic plate will generally show the spots, if the case be typhoidal, and thus clear away doubt. Because of the annoyance caused the patient and because of the difficulty in arranging the apparatus, it is suggested that a telephoto appliance be used. If this will give as good results as the ordinary instrument it would seem that one has in photography a most valuable aid in positively establishing diagnoses in questionable cases.

Fusiform Dilatation of the Lower Esophagus.—The opinions concerning the origin of fusiform dilatation of the esophagus in its lower part diverge considerably; according to O. ZUSCH (Deutsch. Arch. f. klin. Med., Vol. 73), the following have to be considered: (1) Primary disturbances of innervation with secondary inflammatory processes. (2) Primary esophagitis with secondary cardiospasm. (3) Primary atony, either congenital, acquired or functional. To these must be added a congenital anomaly in which two separate dilatations, a supra- and an infradiaphragmatic one, are to be distinguished and which may cause no symptoms whatever. Any time, however, an accident, such as the act of vomiting, may lead to a stasis in the diverticulum with gradual dilatation and decomposition of the food, resulting in dysphagia, regurgitation of food and drink, leading to rumination by day and to coughing and vomiting by night. Sometimes there is pain behind the sternum which may resemble angina pectoris or intercostal neuralgia or may feel as if a heavy load lay over the stomach. The vomitus, as microscopical examination shows, does not come from the stomach. Objectively, the lower pole of the dilatation can be passed more readily with thick sounds than with thin ones. No diagnostic value can be attributed to percussion, auscultation, or to transillumination with Roentgen rays. If the tone of the esophageal wall be still fair or if it can be restored by proper treatment, the prognosis is relatively good, even if the disposition to new exacerbations does not disappear entirely. Therapeutically the greatest care is to be exercised in the use of sounds and only thick and soft ones should be chosen. For the first days of treatment the sac must be emptied and the esophagus washed, while food is introduced into the stomach exclusively by the tube. Later, small meals

of fluid or semifluid food are to be allowed and this gradually increased in amount and frequency. At this stage the tube must be introduced before retiring to prevent stagnation over night. The use of alkaline waters is good for the esophageal catarrh. The treatment requires considerable perseverance and has not yet been developed surgically.

Nervous Symptoms of Pneumonia.—As in other diseases depending upon germs and their toxins, nervous symptoms are not rare in pneumonia. F. SCHULTZE (Deutsch. Arch. f. klin. Med., Vol. 73) has frequently seen severe headache, delirium and hallucination, stiffness of the neck, pain upon pressure on the calves, herpes labialis, and increased, diminished or absent patellar reflexes. No mention has been found of the condition of the pupillary reflexes; the author has examined a number of patients for these. Not rarely they are absent or pathologically sluggish, even if the sensorium be clear, the background of the eyes normal, and contraction occur on convergence and accommodation. The explanation of this phenomenon may be in an increased intracranial pressure in the nature of an acute hydrocephalus or more likely, since other pressure symptoms are absent, in a selective action of the pneumonia toxin on the fibers controlling the reflexes.

Neuritis of the Splanchnic Nerve.—The autopsy of a case of H. STILLING (Deutsch. Arch. f. klin. Med., Vol. 73) forms a valuable contribution to the subject of diseases of the sympathetic nervous system. The abdomen showed the presence of a large amount of free fluid which had caused most of the symptoms during life. There were found also edema, fluid in the pericardial sac with dilatation and hypertrophy of both ventricles, and emphysema of the lungs with infarction. The spleen showed considerable hypertrophy and the kidneys congestion, while the liver reached into the iliac fossæ, weighed 2,350 grams and had a distinct nutmeg surface. A careful search of all the organs gave nothing to explain these lesions, except that there was a considerable degeneration in the splanchnic nerves. The cause of this could not be discovered.

Obliterating Fibrous Bronchitis.—This affection constitutes an acute or subacute occlusion of the finest bronchi by means of connective tissue and may, if extending over a large part of the lungs, rapidly lead to death. The patient observed by A. FRAENKEL (Deutsch. Arch. f. klin. Med., Vol. 73) had been subjected to nitrous fumes and suffered from rapidly increasing dyspnea, cyanosis, emphysema, with crepitation at the bases; on the third day there was rusty sputum. There was neither dulness nor fever. For a few days the man improved, but death occurred shortly after, owing to respiratory and cardiac insufficiency. The author is of the opinion that the fumes first caused a hyperemia of the pulmonary tissues with cauterization of the bronchial mucous membrane. When the desquamated epithelium was thrown off by the sputum the patient felt better; but soon the development of young connective tissue from the raw mucosa led to an occlusion of so many of the finer air-passages as to be incompatible with life. The importance of this case for industrial hygiene is emphasized.

Suprarenal Diabetes.—The observation has recently been made that there is present in the suprarenal body a substance, which, if it gets into the blood, is capable of setting up a glycosuria. To determine how this glycosuria comes about, L. METZGER (Münch. med. Woch., Mch. 25, 1902) experimentally determined the condition of the blood in dogs fed with suprarenal extract. In all there resulted a hyperglycemia which proves that the kidneys were not involved and it seems probable that the toxic substance in some way inhibits the activity of the pancreatic cells.

Alkalinuria.—By the term alkalinuria the secretion of an alkaline urine through the kidneys is meant which subsequently, owing to its reaction, leads to precipitation of the phosphates and hence to turbidity. In the great majority of cases the cause is clear, for there is an increased alkalinity of the blood itself, and since the ability of the renal epithelium to hold back the alkaline ingredients of the blood is a limited one, these pass off into the urine. The condition of the blood is induced by the ingestion of alkalies or excess of vegetable food or by frequent vomiting whereby much acid is removed from the organism. Another form is considered a secretion neurosis of the kidney and includes neurasthenics, generally with hyperacidity and marked motor insufficiency. The cases published by H. LEO (Deutsch. Arch. f. klin. Med., Vol. 73) cannot, however, be classified as above, since none of the conditions necessary to render the blood more alkaline could be discovered. Treatment (change of diet, administration of acids) had little effect.

Scarlatina and Sublimate.—The doctrine that scarlet fever is caused by bacteria and probably by the streptococcus pyogenes in particular is gaining ground. Contributive evidence to this point is added by F. J. RUCAVADO of San José (La Sem. Méd., Mch. 19, 1902) who, during an epidemic of scarlet fever, found that baths, hot or cold according to circumstances, of 1 to 1,000 watery solution of bichloride of mercury are of value. He orders these baths from the beginning of the sickness and continues them for the first fortnight of convalescence. Under their influence, at all times favorable to the general condition of the patients, scaling of the skin is reduced to a minimum and occasionally is altogether absent, and in addition the skin that is shed is powerfully disinfected, a fact, the value of which must not be lost from the point of view of preventive medicine. In addition to the baths, he prescribes also the same medicine internally administered, but in doses which appear too large to deserve unqualified recommendation, namely, 0.008 grams every three hours. This treatment also shortens considerably the duration of the infection, decreases its severity and seems to check many of the complications.

Remarks on Typhoid.—The report of the army surgeons in regard to the prevalence of typhoid fever during the Spanish War disclosed several astonishing facts. It is said that army surgeons correctly diagnosed about one-half the cases and it is further ventured that this is as good as the average physician could do. W. S. THAYER (St. Paul Med. Jour., Apr., 1902) deprecates the possibility of the truth of such a statement and believes that it is due to the want of thorough hospital training before students begin practice. One is liable to expect from text-book knowledge that typhoid is characterized by particular symptoms which must be present in order that typhoid may be diagnosed. The essential features of typhoid are caused, however, by the general intoxication and not by the intestinal lesions. There is not one single necessary symptom of typhoid fever; nay more, there is not one pathognomonic symptom. The various symptoms which are usually present in typhoid may be either absent or so modified that their significance is not appreciated. It is more often the complete picture of the case and the combination of symptoms which lead the experienced man to make a correct diagnosis. In the army several instances are recorded in which 90 per cent. of the typhoid cases were diagnosed as malaria. It seems impossible for physicians to realize, or, if they do realize it, they are very reluctant to admit that the vast majority of cases of continued fever without apparent cause, which are resistant to quinine, especially if there be no leucocytosis, are typhoid fever. The commoner conditions with

which typhoid fever is confounded, in which the primary seat is not evident, are ulcerative endocarditis, general tuberculosis, certain forms of malaria and occasional instances of late syphilis. He sums up the treatment under four heads: (1) Complete rest; (2) a diet as nourishing as the condition of the patient will permit; (3) measures to relieve the hyperpyrexia and to keep the skin and muscles in as good condition as possible; (4) an ever careful watchfulness for the various dangerous complications. In speaking of the care of the bowels the opinion which is reached by most clinical observers is that it is not advisable to administer laxatives by the mouth. In Osler's clinic enemata are given every other day in case of constipation, but otherwise the bowels are left strictly alone. He does not believe that intestinal antisepsis is of any value for the bacilli have, no doubt, already passed into the general circulation and cannot be reached. Furthermore, it is impossible to accomplish anything like intestinal antisepsis, and there is no evidence that this method has been beneficial.

The Tongue in Malaria.—Besides the silvery white tongue which is supposed to be characteristic of malaria, L. LOFTON (N. Y. Med. Jour., Apr. 12, 1902) describes a condition which he believes to be pathognomonic of the disease. It consists of one or more, generally two, dark lines running from the base of the organ to the apex, and usually separated by a clearly-defined tract of clean mucous membrane about one-sixteenth to one-eighth of an inch wide. These lines are pyramidal in appearance and begin among the large papillæ at the base. In color they resemble the stain of a 10-per-cent. solution of permanganate of potassium.

Relation of the Tubercle Bacillus to Pseudoleucemia.—The etiology of Hodgkin's disease is one of the most elusive problems in medicine, and there are at present included under this term a number of separate conditions. Three forms of disease of the lymph-glands may give rise to the syndrome characteristic of pseudoleucemia: lymphosarcomatosis, tuberculosis, and a peculiar infectious process, the cause of which has not yet been discovered, but which by some is regarded as the only true form of Hodgkin's disease. The relation of the tubercle bacillus to Hodgkin's disease has been suspected, but with the exception of Sternberg no one has declared unqualifiedly in favor of the theory that pseudoleucemia is always produced by infection of the lymphatic apparatus with tubercle bacilli. J. SAILER (Phil. Med. Jour., Apr. 5, 1902), in addition to an extensive review of the literature of the subject, contributes an account of four cases of lymphatic tuberculosis that resembled pseudoleucemia and presented certain common clinical features. The author was tempted to employ the latter to differentiate during life, such cases from true pseudoleucemia (if this actually exist) and from ordinary tuberculous adenitis. Such clinical differentiation seems doubtful, however, although the following symptoms appear to be usually present in the forms which have been determined to be tuberculous at autopsy. (1) Fever, continuous, irregular or recurrent. (2) Moderate anemia, more frequently associated with leucopenia than with leucocytosis. (3) Progressive emaciation. (4) Enlargement of the spleen and frequently of the liver and superficial lymph-nodes. (5) Abdominal tenderness, especially in the right hypochondrium. (6) Hemorrhagic diathesis, epistaxis. (7) Albuminuria, anasarca and jaundice. (8) Death occurring with the eruption of miliary tubercles. It seemed possible that in these cases a variety of tubercle bacillus was present that differed from the one ordinarily infecting human beings. But this hypothesis cannot be established until in a sufficient number of cases constant cultural and pathogenic peculiarities could be observed. In only one of the author's cases were inoculation experiments made and then an actively virulent tubercle bacillus was found. Although no dogmatic statement can be made, the gradual accumulation of positive and the absence of entirely satisfactory negative evidence tends to confirm the supposition that the majority of cases of pseudoleucemia will ultimately be recognized as tuberculous in nature.

THERAPEUTICS.

Acidified Alcohol and Wounds.—Ordinary alcohol is often employed in surgery as an antiseptic. L. DEGAETANO (La Sem. Méd., Mch. 12, 1902) conceived the idea of increasing its antiseptic qualities with acetic acid. This acid is very diffusible and is for this reason ordinarily employed in laboratories for the fixation of tissues in the so-called fluids of Flemming, of Zenker, etc. DeGaetano uses a compound containing 100 grams of alcohol (70 per cent.) and 20 drops of acetic acid. In addition to its power of antisepsis, this mixture presents the very great advantage of making the wound as dry as possible, which in itself makes invasion by the germs unlikely.

Ichthyol for Conjunctivitis.—This drug seems to gain in the number of conditions of inflammatory character to which it may be profitably applied. M. POPOV (La Sem. Méd., Mch. 12, 1902) has used ichthyol in solutions of from 10 to 20 per cent., not only for eye-baths, but in the form of a callyrium. After having turned back the two lids and brought them in this position together again he lets a few drops of the solution fall upon them until the sensation of irritation produced by the medicine begins to extend. He then removes the excess of the fluid with a small ball of absorbent cotton. In this manner he has treated about thirty patients of whom six were afflicted with trachoma, one with granular conjunctivitis of the dry variety without catarrh, six with trachoma complicated with catarrh of the conjunctiva, and seventeen others with chronic trachoma with diffuse infiltration and hypertrophy of the conjunctival sac and mucopurulent secretion. The persons of the last category were cured in about five or six weeks, the dry conjunctivitis in a month and a half and those of the third group in two months. Finally, of the seventeen with hypertrophy, four recovered completely in four months; the thirteen others showed considerable improvement by a diminution of the secretion and in the thickness of the conjunctiva. These drops of the solution of ichthyol are as a rule well supported, cause smarting much less in degree and for a shorter time than does nitrate of silver or sulphate of copper. In one case he found an idiosyncrasy for the medicine which manifested itself by an edema.

Treatment of Epididymitis and Orchitis.—Brilliant results in the treatment of these affections are reported by A. BOCCHI (Gazz. degli Osped., Mch. 16, 1902) through the daily application of the following ointment: Guaiacol, 5; vaseline, 50; supplemented by the usual measures, rest in bed, suspension, etc., and the internal administration of salol, gm. 2, or sodium salicylate, gm. 4, daily in four doses. The author's claims for the guaiacol ointment are that through its application mitigation of pain is almost instantaneous, and this symptom disappears entirely in from four to five days; resolution is effected in from twelve to thirteen days. Applications should be limited to one daily, as more frequent use induces cutaneous irritation.

Prophylaxis of Pertussis.—Though many measures for the cure of pertussis have been studied, its prophylaxis has been limited to isolation. Jenner noted the efficacy of vaccination in the prevention of the disease; other authorities have claimed for it curative power as well. Through study of the effect of vaccina-

tion during an epidemic of whooping-cough, G. POSCHI (Gazz. degli Osped., Mch. 16, 1902) concludes that vaccination is not curative in pertussis when the disease has passed the initial stage, but is so if practised during the period of incubation. Recent vaccination prevents contagion in those exposed to the disease, as proven by immunity of thirty-one infants successfully vaccinated a short time before the onset of the epidemic. Children who had been vaccinated a year previously were not immune; therefore, the author advises vaccination in the beginning of an epidemic of pertussis or immediately after exposure to the disease.

Treatment of Cholelithiasis.—There seems to be a great difference of opinion as to whether surgical interference is indicated in repeated attacks of gall-stones. J. B. MCGEE (Cleveland Med. Jour., Feb., 1902) asserts that medical treatment is so frequently successful that surgery ought not to be resorted to unless the case be very chronic in character, unrelieved by treatment, or when the stone is evidently very large and suppurative conditions arise. Morphine is necessary to control the attack at the beginning and is the best antispasmodic to use. Heat locally or mild counterirritation may aid. In regard to the tendency to recurrent attacks Naunyn believes that internal medicines are of no value, while Chauffard says with confidence that "there should be no surgical treatment." The truth, doubtless, is that some cases respond to medical treatment and they should be given that chance. The objects desired are to increase and liquefy the bile, perhaps render it aseptic, and possibly to exert an alterative action on the mucosa. The diet probably has very little influence, but the avoidance of fatty and rich foods and alcoholic liquors is to be recommended. One of the best remedies to increase the flow of bile is the free use of water and this may be advantageously combined with a little soda bicarbonate or phosphate. Olive oil is supposed by some to have an effect and its constituent oleic acid is now being recommended. The sodium salts seem to have a decided effect in aiding hepatic functions, and the benzoate, salicylate and phosphate are the forms preferred. The succinate of sodium is said to be of evident benefit. Murphy believes that jaundice, due to a catarrhal inflammation, may be readily cleared up by small doses of pilocarpine twice a day for a week or two and may thus be differentiated from jaundice due to obstruction.

Chronic Bronchitis in Children.—The beneficial results obtained from the use of ichthyol in phthisis suggested the use of the drug in chronic bronchitis, especially as it retards the disintegration of albumins and favors the absorption of exudates when taken internally. W. B. JENNINGS (St. Louis Med. and Surg. Jour., Apr., 1902) has used this drug in many cases and claims remarkable success. The following is found to be a good combination:

℞ Ichthyol ..... gr. xxxij
Glycerini,
Syrup aurantii .....aa. ʒss
Aquæ .....q.s. ad ʒij

M. et Sig.: One teaspoonful three times a day, after meals.

It is often found that the first dose nauseates, but later the child acquires a taste for ichthyol, although children under one year seldom take it well. It should be given after meals to avoid the disagreeable taste; increasing doses are not necessary for good results.

Effect of Dilution Upon Toxicity.—The law in posology that the therapeutic efficacy of a chemical substance is in proportion to the weight employed is not borne out by the experiments of B. J. STOKVIS (Deutsch. Arch. f. klin. Med., Vol. 73). According to him, the degree of dilution is of far greater importance. Thus 100 milligrams of the cardiac muscle of the frog could be killed by means of from two to three milligrams of bromide of potassium if employed in proper concentration. A much larger quantity could be brought in contact with the heart if the dilution were higher; therefore, it would be wrong to pronounce two or three milligrams the lethal dose.

Treatment of Erysipelas.—The treatment of erysipelas as conducted by H. KRUKENBERG (Münch. med. Woch., Apr. 7, 1902) by allowing the patients to come in contact with red light only has given very gratifying results. The average duration of the fever was only two days, general symptoms were absent or only very slight and after twelve hours the sharp edge was lost and only a slight reddening and edema remained. The curative action was not due to the red light itself, but to the exclusion of certain rays which favor the advance of the inflammation. It is thought that certain drugs, such as ichthyol, which is known to have a favorable action in erysipelas, cure by preventing these rays from reaching the skin. For this reason, negroes are to a certain degree immune.

Ichthargan in Gonorrhea.—It is a fact which has now received very general recognition that acute gonorrhea, or rather the acute stage of a gonorrheal attack, is a condition well within the control of the practitioner. If he treat it steadily by one of the modern methods of irrigation, he need not fear that it will not gradually but surely subside. The effort to expedite recovery, to minimize suffering, and to lessen the danger of complications, has led to the trial of many new remedies, most of which are as willingly discarded. Ichthargan, according to TAENZER of Bremen (Monatshefte f. prakt. Dermat., Apr. 1, 1902), is a drug which has come to stay. In one case, he had tried Janet irrigations daily for two weeks without avail, while after three irrigations with ichthargan the urine cleared up completely. His general method in the treatment of gonorrhea is at present as follows: With fresh infections he is accustomed to put the patient upon the usual dietary and hygienic regulations, and to prescribe internally only ichthargan, in a solution of 5 centigrams to 200 cubic centimeters of water, of which a dessertspoonful is taken every three hours. The urine becomes clear within from eight to ten days, even in the most severe forms of the disease, and the use of the drug in irrigations is now begun. A one-per-cent. solution is injected daily into the anterior urethra. In chronic gonorrhea he makes use of the same preparation.

Spartein.—It is not, perhaps, sufficiently recognized that there are a number of drugs which compare favorably, even if they do not equal, the action of digitalis in heart disease. Of these drugs spartein has been especially studied by the French therapeutists, most recently by THOMAS (Rev. Méd. de la Suisse Rom., Mch., 1902). He has experimented very largely with the drug in the chronic affections of the heart. He finds that it is a reliable diuretic, although it does not as a rule stimulate to the secretion of more than three liters of urine daily. It is thus inferior to theobromine, although frequently more potent than digitalis. In its action upon the heart it closely resembles digitalis, although it is a much weaker drug. It does not act rapidly. Its cumulative and toxic effects are slight. The principal indications for its use are chronic myocarditis, commencing asystole, subjective cardiac disturbances, and arrhythmia. For advanced cases, and for cases complicated by extensive hepatic and pulmonary changes, the more powerful drug, digitalis, is preferable. The dose should not exceed one-third of a grain in twenty-four hours by mouth, or one-tenth of a grain hypodermically, twice repeated.

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WHAT IS THE BEST PATH TO THE KIDNEY?

ON the second of August, eighteen hundred and sixty-nine, Gustav Simon, of Heidelberg, performed the first nephrectomy; it is therefore thirty-three years since scientific surgical work was begun on the kidney. During this time a great number of very knotty problems have been unraveled, and, particularly in the past decade, very many important decisions touching on the technic of various kidney operations have been reached and probably settled for all time.

It seems, on first thought, very strange that no definite conclusion has as yet been grasped as to the best path by which to approach the organ. Many men are in concert as to what to do when once the kidney lies before them, but there still exist the profoundest confusion and the greatest variety of opinion as to where the primary incision should be made; it has been the most difficult of renal problems. Shall the attack be made from in front or from behind, or shall we, as Mayo-Robson and Abbe have done, compromise by entering at the side? An answer to such questions is to be found only in a comparative study of the statistics of renal surgery which have now gathered in a vast, but unhappily somewhat incongruous mass.

That there are many advantages to the abdominal route is amply vouchsafed by the mere fact that such masters as Trendelenburg and Thornton have for years used and praised it. It is an admirable exemplification of the surgical mandate not to work in the dark—by it we are able to explore the whole abdomen, particularly the pancreas and the far-wandering biliary mechanism; more important than all else, it places us cheek by jowl to the other kidney. In the hands of its advocates it gives good results, but a close study of the cause of death in a long series of nephrectomies leads one very surely to the conclusion that such results are to be obtained only by those whose hands are well practised in its most difficult technic. From shock, for example, more than twice as many die in the course of recovery from the abdominal operation as from the lumbar. From hemorrhage in either case the mortality is small, but five times as many succumb to it after the anterior operation as after the posterior. The condemning web is much more tightly woven when we seek to balance between these two routes on the basis of peritoneal infection. That the ratio here is actually *eighteen* deaths to *one* seems almost incredible! When, with the new modes of examining the other kidney, ureteral drainage, urinary segregation and the like, at hand; when Schede and others report many successful exploratory incisions on the well side, is it not evidence enough?

For the general surgeon who does a nephrectomy but rarely, the question is already answered; he shall apply to the supposed sound organ the tests which the last ten years have placed in his hands; he shall, these failing to convince him, make a lumbar incision on the well side and, if necessary, do nephrotomy. All peradventure thus cleared away, he excises the diseased organ through König's posterior incision, removing the twelfth rib if necessary, and does his best to avoid injuring the pleura and peritoneum. The statistics of thirty years show this to be the course for the man who is not a renal expert. Are others justified in ignoring them?

THE DIAGNOSIS OF SMALLPOX.

CONSIDERING the ease with which it is generally considered that a case of smallpox can be recognized, it is distinctly surprising to find a set of experts in the disease agreeing, as they did at a recent meeting of the New York Academy of Medicine (see MEDICAL NEWS, page 955), that

smallpox has no single pathognomonic sign by which it can be recognized and that certain cases baffle the most expert diagnosis until a fatal termination (in the fulminant types) or a thorough development of the eruption makes the picture complete. It is evident that the faithful work of diagnosticians in this country during the present epidemic which has been of generally mild character will do much to revolutionize the differential diagnosis of the disease that has found a place in most text-books for many years. Medical text-books are not infrequently conservatories —museums some one has called them—of long since exploded notions, and the chapters on the diagnosis of smallpox have as a rule been glaring examples of the lack of modernity.

Practically all the text-books on medicine, until very recent years, have insisted on the occurrence of multiform lesions over the same area of the body as pathognomonic of varicella in contradistinction to variola. This symptom alone has been considered sufficient to settle the diagnosis and is often found stated as an absolute differential principle. Cases of mixed lesions are rare in smallpox, but they may occur. Variola patients have been seen with papules, vesicles, pustules and even crusts simultaneously present on a limited portion of the body. The superficiality of the lesions does not constitute a pathognomonic sign any more than does the presence or absence of mixed lesions. Varicella lesions are practically always superficial, those of variola deep, but in exceptional cases just the opposite may be true and the lesions, for instance, of a case of mild, discrete smallpox may consist of clear superficial vesicles with perfectly transparent contents. When such a case occurs as the first in an epidemic in a particular locality, and first cases are often very light, especially if occurring in persons partially protected by an old vaccination; it is then practically impossible to be sure of the nature of the disease until the occurrence of further typical cases reveals the mystery.

The lesions on the palms and soles so frequent in smallpox, unfortunately for assurance of diagnosis, occasionally occur in varicella. They may be present (though rarely) in pustular syphilide. This affection is really one of the most difficult of differentiation, especially if seen during a smallpox epidemic and under suspicious circumstances. The fever, as well as the rash, may be present and an intense tired feeling that is almost an ache may simulate the pains in the back so characteristic of the prodromal stage of smallpox. As a matter of fact, while typical cases of smallpox are exceedingly easy of recognition under favorable circumstances, atypical cases make the most serious diagnostic problem in all medical practice.

The economic question involved in smallpox demands an instantaneity of decision in these cases that still further complicates the position of the diagnostician. Often only a careful survey of all the symptoms will suffice to justify a diagnosis and even then all possibility of error is not removed. Our diagnostic experts are to be congratulated on the fact that so few mistakes are made under the trying circumstances.

For economic reasons and public health it would be eminently desirable if smallpox could be recognized readily during its prodromal stage. There is in a certain number of cases an erythematous rash that precedes the ordinary smallpox rash, by from twenty-four to thirty-six hours. This not infrequently leads to the suspicion or even the positive error in diagnosis of scarlet fever. The differential sign, although even this is not absolute, since sore throat sometimes occurs as a premonitary symptom of smallpox, is the characteristic scarlatinal angina. The erythema of smallpox is always noted first in the groins and axillæ; that of scarlet fever occurs on exposed portions of the body, especially on the face. It would be rashness to attempt to diagnose smallpox at this stage in spite of the desirability of the early isolation that it would afford. That our American experts are recognizing the disease early and consequently protecting others from exposure to it, is evident from the fact that Dr. Hubbard was able to exhibit at the Academy meeting a photograph of a patient in the macular stage of smallpox—one of the first of its kind that has ever been made.

In many cases there are very few symptoms of the stage of invasion of the disease. The first symptom of the ailment may be the eruption seen not in the macular, but in the vesicular stage. It is in this class of cases particularly that the stage of incubation is apt to be prolonged beyond the normal. While the usual incubation period is considered to be from twelve to fourteen days, a period of sixteen days of incubation is not rare and exposed persons should be kept under observation for at least twenty days. The incubation is prone to be longer in those ineffectively protected by vaccination, as, for instance, by a vaccination from twelve to fifteen years old. Cases like these particularly encourage the practice of vaccinating all exposed persons, for the vaccination, if successful, will run

a shorter course than the smallpox and so anticipate its infective power by an immunity. Several days after exposure, from even three to five, is not too long an interval to preclude all hope of vaccinal protection. In the previously vaccinated especially vaccinia runs a shorter course and exerts its immunizing power sooner. The presence or absence of a recent vaccination scar is accepted by all the experts as a significant sign of the character of the disease under suspicion in the doubtful cases.

These are the men who see most smallpox and whose opinion is therefore worth most. Physicians protected by vaccination have no fear of smallpox and the results justify their confidence. While our present lack of absolute diagnostic differentiation early in smallpox necessarily leads to exposure of many to the disease, it is the simple duty of all to take advantage of the assured protection vaccination affords.

SANITARY NEEDS OF MARTINIQUE.

THE special article printed elsewhere in this issue on the sanitary needs of Martinique, by Dr. George A. Soper, the sanitary expert, sounds a timely note of warning concerning the possibility of epidemic at Martinique.

The density of population in Martinique and the neighboring islands is greater than that of any state in the Union excepting Rhode Island. Under the best circumstances this part of the world has a bad reputation for health. Martinique itself has frequently been visited by epidemics of yellow fever, and is thought by some to be a focus or original seat of this disease. At ordinary times dysentery is by no means uncommon, and is capable of assuming an epidemic form; malarial fevers constitute one of the chief causes of mortality among the people; and there is a large number of infectious and contagious diseases to which the people are liable. At the present moment when the more salubrious portions of the island have been evacuated and there is a congestion of refugees in and about the unhealthful city of Fort-de-France, such conditions as make for health must be very seriously impaired.

The terrible experiences through which the inhabitants of Martinique have recently passed and are still passing render them peculiarly liable to disease. The history of epidemics shows that great mental distress and the depressing devitalizing effects of improper or inadequate nutrition have ever been the most prominent predisposing factors to pestilence. The insanitary habits of the people, the near presence of infectious diseases, and the approach of the unhealthy season do not tend to lessen the weight of these factors in the case of Martinique.

Under the present circumstances, it would surprise no one if a general epidemic of yellow fever, for example, should make its appearance, while the chances are large that local outbreaks of dysentery, typhoid fever and allied intestinal diseases will appear. In its epidemiological character, Martinique bears resemblance to a tinderbox. It is easier to prevent a conflagration than to arrest one. No wiser preventive measure could be taken than to transport part of the population to the neighboring islands if this were practicable.

In the relief measures which are being rushed to the front, the first essential is, of course, food. There is every reason to be satisfied with the steps that have been taken to supply this want. The refugees who have been able to subsist until this time are not likely to starve.

It is scarcely less important that the necessities and resources of hygiene should be recognized promptly. There is need at Martinique of an organization to initiate a campaign of sanitation and bring into effect every facility which can be made available for protecting the health of the refugees. It is to be expected that the French authorities will initiate these measures, but nothing should be taken for granted. The American people can do much to encourage the work, and can put into the hands of the authorities valuable means for the furtherance of their efforts. Forethought should be used at home in the selection of provisions and supplies in order that the more staple and familiar stores and disinfectants shall be forwarded, and those who will be charged with distributing this succor at Martinique should be instructed to render such cooperation and aid in sanitary lines as lie in their power.

Fortunately, a great deal can be done to improve the conditions of living among the people by those who have some knowledge of the principles of hygiene which apply in such cases. To those who desire such information and are interested in the medical sanitary aspect of the situation at Martinique, Dr. Soper's article will be of much value.

THE AMBULANCE SURGEON AND THE PUBLIC.

THERE are from time to time cases in our "yellow journals" of what they see fit to call

examples of incompetency, ignorance and neglect on the part of the ambulance surgeon. It is perfectly true that such criticisms are written for sensation only, almost invariably without any inquiry whatever of the hospital authorities as to the merits of the case or as to the hospital side in general, and necessarily without exception in the absence of any knowledge on the part of the reporter as to the insurmountable medical difficulties which surround the duties of ambulance work at all times. With that strange facility by which every one accepts as probably true most of the statements which appear in newspapers, the public are rather apt to look upon ambulances more as a curse than as a blessing.

It is expecting too much to endeavor to educate the reporters, the papers and the public to anything like a realizing sense of the difficulties under which that public servant, the ambulance surgeon, usually labors, and to teach them to appreciate the fact that his diagnosis or opinion is given without the advantage of a thorough physical examination, which cannot possibly be made on the spot, and is stated purely for the purpose of satisfying the demands of police regulations, which require that a medical opinion shall be uttered for the matter of formal record only.

Time alone will alter the abuse to which this faithful public servant is subjected but there are a few points concerning his conduct which are not medical in their character, but important in their influence upon the impression he gives the public.

It is too often a sight of our streets that an ambulance is noted passing along in which the doctor sits with one or both feet over the tailboard, with a cigar, cigarette or pipe dangling from one corner of his mouth, with his cap pushed to the back or side of his head, or sometimes not on his head at all, and occasionally in summer he appears without a coat, or else in the act of putting one on as the ambulance drives along. Criticism of such conduct by lookers on need hardly be repeated here. There is no excuse whatsoever for it, and the ambulance surgeon has no more right to appear in the public service with such mannerisms than would a private physician driving about in his cab. The public ambulance surgeon should be governed by a quiet, reassuring dignity such as is the usual practice of our best physicians and surgeons, and it is certain that if the young men would take this view of it many so-called errors of diagnosis would be overlooked in the papers in virtue of that proper, professional consideration for public good taste and the patient's feelings. These rights he would then at least appear to exercise.

Recently in lecturing to a class of students, a professor stated that good taste, good manners and patient consideration will carry a man further along in the practice of medicine than will mere technical knowledge of medical matters without them. We can apply the same principle to the office of ambulance surgeon, and would urge upon those who in a few weeks will go on duty in this capacity in all our large hospitals that the policy of personal self-respect and quiet dignity will be of the highest value and probably prevent a great number of unfavorable, and it may be unjust, adverse criticisms.

ECHOES AND NEWS.

NEW YORK.

Post-Graduate Medical School.—At a meeting of the Board of Directors of the New York Post-Graduate Medical School and Hospital, held May 5, 1902, the following appointments were made in the Faculty: Carl Beck, M.D., Professor of Surgery; Henry Ling Taylor, M.D., Professor of Orthopedic Surgery; Simon Baruch, M.D., Professor of Hydrotherapeutics; Grace Peckham Murray, M.D., Adjunct Professor of Diseases of Women; John B. Rae, M.D., Adjunct Professor of Diseases of the Ear.

New Police Surgeons.—Police Commissioner Partridge has appointed as police surgeons Dr. Frank R. Oastler and Dr. Charles A. Elsberg. Their names appeared in first and second place on the eligible list prepared by the Municipal Civil Service Commission. Dr. Oastler, whose examination was marked 99.20, was graduated in 1891 from Yale and in 1894 from the College of Physicians and Surgeons. Dr. Elsberg is a graduate of the College of the City of New York and the College of Physicians and Surgeons. The salary of a police surgeon is $2,500 and he is entitled to pension.

Richmond's New Health Officer in Office.—Dr. John T. Sprague, who has just been appointed assistant sanitary superintendent of the Borough of Richmond, to succeed the late Dr. Theodore Welser, assumed his new duties last week. Dr. Sprague is a staff physician of the S. P. Smith Infirmary. Prior to the consolidation he was health officer of the Board of Health of Edgewater, and afterward was attached to the Health Board of the borough.

Meeting of American Therapeutic Society.—The third annual meeting of this Society was held last week in New York City and its program was one of exceptional interest. A number of the papers there read will be published in the MEDICAL NEWS.

An Omission.—In our abstract of Dr. Herter's paper on Adrenalin in last week's MEDICAL NEWS, the fact that the work was largely aided by an appropriation from the Rockefeller Institute Research Fund was omitted.

Smallpox in Asylum.—The Long Island State Hospital for the Insane at Kings Park is under smallpox quarantine. More than a week ago several patients in the big building, in which Ward 12 is situated, were

stricken, and the superintendent, Dr. C. M. Dewing, took measures to prevent its spread. It did spread, however, and there is said to be an epidemic among the 2,000 patients.

New York Academy of Medicine.—The following have been recommended to resident fellowship: Drs. R. C. Eddy, F. C. Hollister and I. O. Tracy; to non-resident fellowship, Drs. W. F. Campbell, C. O. Maisch and W. P. Spratling.

The Section on Ophthalmology will meet Monday, May 19th. Drs. G. H. Cocks, C. J. Kipp and J. Wolff will present cases.

The Section on General Medicine will meet Tuesday, May 20th, and a symposium on Summer Climates and Climatotherapy will be given. The Climate and Health Resorts of Maine by Dr. Guy Hinsdale, Ocean Climatotherapy in Summer by Dr. Holbrook Curtis, Summer Climatic Treatment of Bronchial Asthma by Dr. Beverley Robinson, Summer Climatic Treatment of Neurasthenia by Dr. E. D. Fisher, Mineral Spring Resorts by Dr. J. K. Crook. Discussion will be held by Drs. J. W. Brannan, L. F. Bishop, S. Baruch, A. H. Smith, W. H. Thomson and others.

The Section on Obstetrics and Gynecology will meet Thursday, May 22d. Dr. Garrigues will show specimens of Endothelioma of Ovary. Dr. J. Riddle Goffe will read a paper on Etiology, Pathology and Palliative Treatment of Retroflexion of the Uterus; Dr. Leroy Broun, on Alexander's Operation; Dr. Brooks H. Wells on Abdominal Operations, and Dr. H. N. Vineberg on Vaginal Operations for Retroflexions.

An Imposter.—The profession is warned against a young man, heavily built, tall, a good talker, who professes to be an agent for "Collier's Weekly," and who solicits subscriptions to this periodical, offering a three-volume history as a premium. The manager of this weekly has declared this man to be an imposter.

PHILADELPHIA.

Smallpox in Pennsylvania.—The Columbia Board of Health has asked Governor Stone to direct the Secretary of the State Board of Health to visit that place and investigate an epidemic of smallpox.—At South Bethlehem all the physicians refused to undertake the care of a boy suffering from smallpox, although a compensation of $10 per day was offered. One physician offered to take the case at $40 per day if the borough furnished him a house, meals, clothing, and medical supplies. The President of the Board of Health finally took the case at $10 per day.

Free Hospital for Poor Consumptives.—The fourth annual report of this organization shows that during the past year 238 patients were cared for in various hospitals. In addition to these 69 patients were cared for at the White Haven Sanatorium. The average gain in weight of these patients was thirteen pounds. The total receipts for the year were $21,-711.30; expenditures, $21,045.91.

Medical Research.—The daily "Ledger," in a recent editorial on the above subject, calls attention to the work of the Pathological Department of the University of Pennsylvania and emphasizes its value to the profession and to this city. Dr. Pepper's foundation, the Pepper Laboratory, is characterized as perhaps his best gift to the institution over which he so successfully presided. The proposed new medical laboratories are pronounced worthy of prompt and generous contributions, as "every hospital and medical school must now have its own laboratories, and here in Philadelphia our hospitals and medical schools have done the best they could with their limited means. Philadelphia can only hold its old place as a leader in medical instruction by giving to the University the means for a complete equipment of laboratories for medical research." The foregoing is quoted to show the sentiment, extending even to the lay press, regarding future advances in medicine in this city. Laboratories are the great centers of interest. In this connection should be mentioned the new laboratory building of the Medico-Chirurgical College which was opened May 1st with appropriate exercises. The chemical laboratory is stated to be one of the finest in the United States.

Federation of Jewish Charities.—The first annual meeting of the Federation of Jewish Charities of Philadelphia shows the most gratifying success of the new plan. The Federation embraces nine institutions—hospitals, asylums, societies—in Philadelphia, and three outside of the city to which contributions are made. The contributions were more than $26,000 in excess of any previous year, this being pointed to as an emphatic endorsement of the practicability of the Federation.

Jefferson Medical College.—Dr. M. H. Bochroch has been appointed demonstrator of nervous diseases, Dr. Alfred Gordon, instructor in nervous diseases, and Dr. William Pickett, instructor in insanity.

Acute Dilatation of the Stomach.—At the meeting of the Pathological Society, held May 8th, Dr. W. M. L. Coplin read a paper on Acute Dilatation of the Stomach, with special reference to changes in the elastic tissue found in that condition. After reviewing the literature of the subject Dr. Coplin gave the histologic findings in four cases that came under his observation. The cellular elements in the muscularis mucosæ showed considerable fragmentation, a tendency toward dissociation with swelling of the intercellular elastica. The mucosa in his cases showed different degrees of catarrhal change and in all instances an associated cloudy swelling. The muscular layers of the organ were, in each instance, more or less altered in a manner similar to the change mentioned as occurring in the muscularis mucosæ. The degree of alteration varied in different cases; in all cases, however, there was an irregular kinking in some of the layers that the writer of the paper attributed to loss of contractility in the kinked cells with retention of contractile power in other elements, which, by contraction produced the conspicuous change in the kinked cells to which reference has already been made. Other changes in the elastica were noted.

Commission Investigating the Treatment of the Insane in Pennsylvania.—Some interesting points were brought out at the recent meeting in this city of a commission of the Legislature appointed to enquire into "the condition of the insane in State institutions and as to the policy and effect of the present practice of removing them to the different county institutions." Most of the officials and directors of the hospitals for the insane throughout the State were represented at the session. Information was sought as to the expenses of boarding patients in the different county institutions and the precautions observed against fire and contagious diseases. Respecting the value of treatment of insane patients in a few large hospitals or in a number of smaller ones, Dr. Mayberry, of the Luzerne County Hospital, expressed decided opinions. He is opposed to the centralization system as advocated by Dr. Wise, formerly of the New York Lunacy Commission. He suggests that "there should be a number of smaller hospitals for the treatment of acute curable cases which have not become chronic. I have never yet seen any good resulting from contact of curable cases with the chronic insane. I have seen cases which I believed curable made chronic by contact with the chronic insane." Epileptic patients might be segregated with advantage. Dr. Mayberry said that the scarcity of well-trained male nurses was a great obstacle in the treat-

ment of the insane. Young men who are fitted by temperament and training for such positions are not paid salaries sufficiently high to induce them to adopt such a calling. In reply to a question Dr. Mayberry said that he saw no objection to having hospitals of a capacity of 2,000 to 3,000 for the treatment of the chronic insane. Superintendent Geary, of the Philadelphia Almshouse, stated that there were 1,444 patients in the insane department, the normal capacity of which is between 900 and 1,000. There is no separate building for epileptics, of whom there are 70 men and 65 women. A significant point in this testimony was that regarding the question of heredity. Superintendent Geary said, "Sixty per cent. of the inmates of the West Philadelphia institution are tainted with insane blood. Ten per cent. of the cases are traceable to alcohol, leaving thirty per cent. to all other causes. This matter, I think, calls for legislative action and the enactment of a more rigid marriage law."

Obituary.—Dr. Thomas F. Riegel, one of the resident physicians at St. Joseph's Hospital, died in that institution on May 7th of typhoid fever. Dr. Riegel, who was twenty-two years of age and a native of this city, was a graduate of Jefferson College, 1901.

Dr. Ida E. Richardson, the gynecologist and one of the best-known and most highly-esteemed women physicians in this city, died on May 9th, at her home, as the remote result of an operation undergone in February. Dr. Richardson was born in this city in 1845 and graduated from the Woman's Medical College in 1879. Her practice was limited wholly to diseases of women and children, she declining to treat men. She was for a time instructor in practice at the Woman's Medical College and was one of the founders of the West Philadelphia Hospital for Women. Dr. Richardson, in addition to her professional ability, was especially noted for her womanly qualities and Christian character.

CHICAGO.

Recommendations by the Officers of the Day at the County Hospital.—Only four recommendations have been made or added to those heretofore mentioned in the MEDICAL NEWS as emanating from the officers of the day at the County Hospital. These are: (1) That a bulletin board be established for announcing unusual and interesting cases treated by internes, that other internes might discuss the cases and criticize the treatment; (2) that a wardrobe be established to provide clothing for needy persons dismissed from the hospital; (3) that the City establish an especially-constructed hospital for contagious diseases, which can be so operated as to pay expenses; (4) that recommendation 3 be carried out.

The Fitting of Spectacles Not Construed as the Practice of Medicine.—The Appellate Court of the Second District of Illinois, in the case of Smith *versus* the People, has decided that an itinerant oculist and spectacle fitter is not engaged in the practice of medicine. The appellant advertised as the "Great Chicago Eye Expert," and his advertisements also contained the following: "If you have blurring, dizziness, neuralgia, headaches, spots before the eyes, inflammation, granulation, winking, trembling spells, cataract, burning and smarting of the eyes, various brain affections entailing not only positive injury to the sight, but untold misery, call immediately." The Court reasons that this is not the practice of medicine. "The defendant did not cure any of these ailments; whenever his patrons ceased using the glasses defendant had supplied to them, their prior troubles returned." The case has been carried to the Supreme Court.

New Building for Dunning.—The County Board decided May 3d to construct a building for general purposes at Dunning to cost $20,000. It is said, the building will accommodate 100 patients.

Illinois State Medical Society.—At the forthcoming meeting of this Society, to be held at Quincy, May 20, 21 and 22, 1902, Dr. Roswell Park, of Buffalo, will deliver an address on surgery, and Dr. Geo. Dock, of Ann Arbor, Mich., an address on medicine. Approximately 75 papers will be read before the three sections of this Society.

A Dowieite Seeks Vaccine.—We have been reliably informed that Dr. Spelcher, a Dowieite elder, called on the Health Department for protection from a case of smallpox on the South Side, near a colony of Dowieites. The object lesson of smallpox in Zion has apparently had a salutary effect on the antivaccinationists of the Dowie cult.

Memorial Institute for Infectious Diseases.—The work of treating acute infectious diseases has been commenced by making a temporary arrangement with the Presbyterian Hospital. The institute was incorporated January 2, 1902, and its sole object is the scientific study and treatment of scarlet fever and other infectious and contagious diseases. At present the institute derives support entirely from funds generously provided by Mr. and Mrs. Harold F. McCormick. The Board of Trustees consists of Dr. Frank Billings, Mr. Charles L. Hutchinson, Mr. Stanley R. McCormick, and Dr. Ludwig Hektoen. In order that the institute might begin its important work as promptly as possible, a temporary arrangement was made with the Presbyterian Hospital whereby the institute secured absolute control of a small number of beds in properly-equipped and isolated houses for the exclusive care of scarlet fever patients. In the admission no discrimination is made between those able and those not able to pay. Owing to the prevalence of scarlet fever in the city, the capacity of the institute has been taxed to the utmost almost from the beginning, some 35 patients having been admitted since February 1st. It is the full intention of the founders of this institute to secure its enlargement, so that it may be better able to meet the urgent necessity in this city of increased hospital facilities for scarlet fever, diphtheria, and other diseases of similar nature and of like importance to the community. This great need would be best met by the establishment upon a spacious piece of ground of a large institution with separate pavilions for the proper isolation of the various contagious diseases, each one of which may be dangerous for patients suffering from any one of the other diseases of this group. Here is an excellent opportunity for wealthy benefactors to join hands in carrying the good work already begun to adequate completion. The idea of endowments of separate pavilions at once suggests itself. If ever the municipality should decide to do more than it has done or is doing for the care and prevention of contagious diseases, there is apparently no good reason why municipal efforts should not unite with individual munificence and enterprise in establishing an institution of a size and character commensurate with the needs of a great city. However, the contingency of any municipal undertaking in this line seems so remote at the present time that all hope for relief and aid naturally turns to philanthropists.

Carcinoma of the Larynx.—Dr. Arthur Dean Bevan exhibited three cases of carcinoma of the larynx before a recent meeting of the Chicago Surgical Society. In the first case the disease had existed for a number of months, and it was not thought justifiable to resort to radical operative measures. The carcinoma had gradually extended from the larynx to the esophagus, so that a tracheotomy was done to relieve the dyspnea. The patient had worn a tracheotomy tube

for a number of months. The patient could not swallow, so that it was necessary to resort to rectal feeding. The case was an example of the work which had been done in the past, certainly up to the time of the celebrated case of the German Emperor. The second case was that of a patient upon whom the late Dr. Fenger did a complete laryngectomy; the patient recovered. He thought surgeons had recently improved upon the method adopted by Fenger in this case. In the Fenger case a preliminary tracheotomy was done and later the larynx was completely removed. The patient has since worn a tracheotomy tube. He was very much improved by the operation and was in a condition to wear an artificial larynx. The third case was one in which he did a complete laryngectomy after the manner suggested by Keen, which operation had been carried out practically with some modifications by Kocher in a considerable number of cases.

Perforation of the Bowel in Typhoid Fever.—Dr. G. E. Armstrong, of Montreal, Canada, read a paper with this title, by invitation. He said that during the past six years there had been treated in the Montreal General Hospital 932 cases of typhoid fever. Perforation of the ileum had occurred in 34 cases, or 32.3 per cent. In one case of a most malignant type, with tympanites, dulled sensorium and profound toxemia, the perforation was first recognized at the autopsy. In 33 cases the perforation was recognized during life and the opening closed. Five of these recovered. In one other case the patient died five days after operation, and the pathologist reported that death was due to the typhoid toxemia and not to the perforation. If that case be included, there were six recoveries in 33 cases, or 18.18 per cent. As to sex, there were 21 males, and 9 females. In three cases the sex was not stated. Of those that recovered 3 were males and 3 were females. The number of females in the recovery list was striking. There were 21 males operated upon, and 3, or 14¼ per cent., recovered, and of 9 females, 3, or 33⅓ per cent., recovered.

Leucocytosis.—He had not found the presence or absence of leucocytosis a guide to be depended upon. In one case it increased 50 per cent. in the first two hours after perforation. In another case it was only 4,600 eight hours after the occurrence of symptoms of perforation. In one case it increased from 4,000 to 10,000 in six hours. He then made an exploratory incision and found no perforation, but an apparently acute infection of the mesenteric glands. The patient made a good recovery. In another case it was only 4,000 eleven hours after perforation; two hours later the perforation was closed by operation; the patient recovered. It was a symptom to be carefully observed and considered in association with the presence or absence of other symptoms, but upon which alone no great reliance could be placed.

Operation.—In the Montreal cases the operation was performed during the first twelve hours in 10 cases, with 4 recoveries, or 40 per cent.; second twelve hours in 10 cases, 1 recovery, or 10 per cent. Of the 20 cases operated upon during the first twenty-four hours, 5 recovered, or 25 per cent. During the third twelve hours, in 3 cases, and they all died. In one case forty-eight hours after perforation, died; in one case sixty-eight hours after perforation, died; in one case seven days after perforation, recovered; in seven cases, time after perforation uncertain. Of the 6 recoveries, one was operated on two hours after the perforation, one thirteen hours after, one eight hours, one ten hours, one five hours, and one seven days after. The operation in the last case was really nothing more than the opening of an intra-abdominal abscess. Four of the five acute cases were operated on during the first twelve hours. So far as his experience goes, it indicates early interference.

Concerning a New Series of Synthetic Salts; the Nucleids of Iron, Copper, Mercury and Silver.—Dr. E. R. Larned read a paper on this subject before a meeting of the Chicago Medical Society, held May 7th. He drew the following deductions: (1) These new salts of nucleinic acid are rational reconstructives; they are pure tonics; they increase physiological resistance; they increase the functional activity of secretory organs. (2) They are powerful germicides, not harmful, but beneficial to the tissues. (3) If the present knowledge of nucleins and leucocytosis be correct, then the nucleid is the proper form for administration of metals. (4) One does not positively know the rationale of their action, but there is nothing which holds out such prospects for successful medication. (5) These new synthetic salts are valuable additions to the Pharmacopœia.

GENERAL.

Charlatanism in Berlin.—From a recent police report the following interesting figures are gathered: The results of the census of irregular medical practitioners show the presence in that city of 476 "healers," or in the proportion of 1 to 4.6 of licensed physicians. The increase in the population since 1879 has been 61 per cent.; the increase of doctors, 102 per cent., of charlatans, 1567 per cent. The male offenders are recruited from the ranks of servants, mechanics and clerks; the females were usually house-servants, only a few having been trained nurses.

Foreign Physicians in London.—In a total of 175 foreign physicians practising at present in London, 63 are American. The six doctors of the feminine persuasion are natives of Russia, Sweden (3), Germany, and Italy.

New Boston Hospitals.—The first active step toward the expenditure of the fortune which Peter Bent Brigham accumulated in Boston years ago, in running a concert hall and in various other investments and which he left in trust for the maintenance of a hospital, was taken last week by the formation of a corporation under the name of the Peter Bent Brigham Hospital Corporation. The trust, which was established twenty-five years ago, will end on May 25th. The net amount available for the purpose is said to be $4,000,000.

Medical Society State of West Virginia.—The thirty-fourth annual meeting of this Society will meet at Parkersburg, May 21, 22, 23, 1902. The program announced is one of exceptional interest.

American Medical Editors' Association.—The annual meeting of this Association representing in its membership the leading medical journalists of the country will convene in the Y. M. C. A. Bldg., Saratoga Springs, N. Y., June 9th and 10th. The preliminary program includes a number of valuable papers, and gives assurance that the meeting will be a most successful and interesting one. An important feature will be a symposium presenting various features of editorial and business management of medical journals. The annual dinner of the Association will be given at the Hotel Kensington on the evening of June 9th. The officers of this Association are Dr. Alexander J. Stone of St. Paul, President, and Dr. O. F. Ball of St. Louis, Secretary, to whom all correspondence should be directed.

Obituary.—Dr. William Houston Boderhamer died of apoplexy late Saturday night at his home in New Rochelle, N. Y. He was a son of Dr. William Boderhamer and was born in Paris, Ky., where he practised successfully for twenty-five years. He was sixty-two years old.

Dr. John G. Elliot, assistant physician at the Hudson River State Hospital, died suddenly of heart disease on Monday, May 12th. He was thirty-one years old, was born in England, and came to this country in 1896 and was graduated from the Buffalo Medical University.

Dr. Marie E. Zakrzewska, the pioneer woman physician of Boston and one of the pioneers in America, and the founder of the New England Home for Women and Children, is dead. She was born in Berlin in 1829. Her great desire to study in her chosen profession, which the law forbade her to do at home, led her to come to America in 1853. She took the degree of M.D. from Western Reserve Medical School in 1856. Drs. Elizabeth and Emily Blackwell, of this city, were among her early associates.

SPECIAL ARTICLE.

THE SANITARY NEEDS OF MARTINIQUE.

BY GEORGE A. SOPER, PH.D.,
OF NEW YORK.

ALTHOUGH it is generally known that certain portions of the West Indies support a large population, few people appreciate how closely the inhabitants of Martinique are gathered together.

According to the last edition of the Statesmen's Year-Book, the population of Martiniqûe before the recent calamity consisted of 189,599 souls. Of this number 4,665 were West Indians, 5,371 Africans, 1,307 French, and 432 Chinese. The chief town, St. Pierre, had 25,-792 inhabitants and Fort de France, 17,274. The total population occupied an area of 381 square miles, representing nearly 500 persons to the square mile.

Within a radius of 125 miles of Martinique there reside in the islands of the Windward and Leeward groups 675,000 people. The density of the population over the larger area is 357 people to the square mile. This is a greater density than that of Massachusetts, or, in fact, of any State in the Union except Rhode Island.

If we reckon that 40,000 people were killed in Martinique by the eruption of Mount Pelee, we find that there are left 150,000 survivors on the island. If the eruption of La Soufrière at St. Vincent destroyed 2,000 more, which seems to be a fair inference from the information at hand, there will be left something like 39,-000 people there.

How far destruction has visited other islands in the neighborhood, or to what extent the 189,000 estimated survivors of Martinique and St. Vincent are to be classed as refugees, it is impossible at this time to say. From the knowledge at hand we seem justified in believing that the consequence of the cateclysm of May 8th has not been exaggerated. Indeed, it is not improbable that the volcanic disturbances have interfered more or less seriously with the vocations and habits of living of far more people than our imperfect conceptions of those distant lands would lead us to suppose; so that the number for whom intelligent and organized aid will need to be provided will tax even the magnificent charity which kings and nations now seem vying with each other to extend. It is important that the philanthropic movements now on foot should be organized and administered in a judicious and discriminating manner, if the object for which they are intended is not, in some degrees at least, to be defeated.

It is with the object of indicating some of the principal bearings of a phase of the relief work which perhaps above all others is most in need of intelligent and energetic administration that the following remarks are made. The situation calls for the greatest promptness. Whatever is to be done effectively must be done at once.

The conditions which will call for most urgent attention will be those which always follow a great catastrophe where a large population, suddenly experiences a great mental shock and looses at the same time all means of subsistence. We have seen examples of such calamities in the United States. Instances have been afforded by the floods of the Mississippi, notably in 1874 and in 1888, the disaster at Johnstown, Pa., in 1889, the Sea Island hurricane, the Galveston calamity, and the great fires which have devastated some of our cities.

After the first shock which the news of such disasters produces, the world is generally appalled by the announcement that pestilence is liable to break out among the survivors at the scene of destruction. At Johnstown and Galveston great apprehension was felt that one or more of the acutely infectious diseases would appear. Rumors that pestilence had already broken out found their way to the public press and threatened to do serious injury to the commercial interests which were already seriously crippled.

In the great majority of instances the fear of disease and particularly of epidemic disease grows from a contemplation of the disorder and great destruction of life and property, the demoralization that is everywhere apparent, and particularly the want of sanitary control which very soon manifests itself.

As to the reality of the danger which is popularly supposed to exist in the presence of dead bodies of men and animals, little need be said to those who are familiar with modern views of the etiology of the communicable diseases. By them it is known that a foul odor is only occasionally in itself a source of danger, while it is a most unreliable indication that disease-producing conditions are close at hand. According to generally-accepted theory, diseases which are transmissible and capable of becoming epidemic are incapable of originating in foul or decomposing matters. Although we cannot speak from conclusive and final evidence, we seem justified in the belief that every form of infectious disease is produced by a specific agent peculiar to it. This agent or its progenitors has existed for an indefinite period, and is only developed in large proportions and with dangerous virulence within the body of a living host. Thus, typhoid fever, bubonic plague, cholera, etc., are known to be bacterial diseases which occur only when the micro-organisms associated with them are carried by some means from one person to another. Familiar vehicles for the transmission of infectious material are water, flies, dust, and impure food. It follows, if these views be accepted, that those who are compelled to handle the bodies of previously-healthy men and animals killed by violence need have little fear of contracting any of the so-called filth diseases, no matter how far decomposition may have proceeded. Diarrhea is perhaps the worst form of illness to be anticipated. And what is true of the bodies of men and animals is true of vegetable matter as well. In a close observation of the conditions at Galveston, while in charge of the sanitary cleaning of that city, I failed to note an exception to this rule.

The conditions are different, however, when we have to deal with the remains of persons ill of, or killed by, disease. During illness and after death the excretions and surfaces of the person are frequently highly dangerous as sources of infection. Here are to be found the bacteria or special agents which are capable of reproducing the disease with which they have been associated. It is obviously important that contact with infectious material be avoided, that it be prevented from disseminating, and that its source should be removed as promptly as possible. These ends are to be accomplished among the refugees, as in our large cities and

military camps, by isolating each case of acutely contagious or infectious sickness, disinfecting contaminated objects, and destroying infectious material as near its origin as possible.

In the conditions which now obtain in the West Indies probably very few people have been killed, except those who were in health, while among the large number of persons who remain there will almost certainly be some sickness. Therefore, it is safe to say as a practical working proposition that the danger of pestilence lies not among those lifeless matters which have been destroyed by the volcanic eruption, but rather among the survivors and rescuers.

Obviously the first great need of the people of Martinique is food. This demand will be met in proportion as the machinery for reaching the multitude who will be in need of provisions is perfected. Already large quantities of rations are on their way. An administrative organization suited to the distribution of this form of assistance, which later on must include clothing and shelter, is exemplified in the work of the Red Cross Society in America. Provided such an organization can become operative with reasonable promptness so that a food supply which shall be suitable both in quality and quantity can reach the people within a few days, the most that can be done for sanitary safety in this direction will be accomplished. The penalty of failure to reach the island in time to feed the hungry populace will be famine.

Much depends upon the character of the food sent to the sufferers. Under ordinary circumstances the natives consume much fruit and other vegetable products. Martinique imports from the United States salt beef, pork, ham, Bordeaux bread, beans, peas, lard, cotton and oil, smoked herring, cod-fish and biscuit.

Anticipating the present wants more carefully than the foregoing list would indicate, the United States reliefship "Dixie" has sailed with rations made up of four parts rice, one part cod-fish and two parts hard-tack. Under the circumstances these provisions seem to be well chosen. There is one item, however, which seems not to have been included in the list of asked-for stores. This is condensed milk.[1] There could hardly be a better food. Its one objection is its cost.

There is a psychological difficulty which is more difficult to manage satisfactorily than the physical elements in the problem of relief. If we are to believe press information, immense loss in the permanent resources of Martinique have occurred both in city and country. In St. Pierre $100,000,000 has been lost in real estate which lies buried under the ashes. The country people who have depended upon the soil, either directly for the value of the crops raised, or for the live stock whose sustenance is gained from the earth, are to be classed with the city population as being without means of future support. An appreciation not only of the overwhelming character of the destruction wrought, but the hopelessness of a resumption of remunerative employment on the island for a long while is certain to have a depressing and devitalizing effect upon the people. In this psychological condition we have an element highly favorable to disease.

In the history of great pestilence and plagues a state of widespread mental depression has generally been a precursory factor. Pestilence and famine are strongly associated in the popular mind, and there is some justification for this relation in the present teachings of sanitary science. Great distress, depression, hunger, exposure, and other forms of mental and physical wretchedness, when widespread, are among the best-recognized predisposing causes of epidemic. Such conditions, if they do not actually produce plague, typhus, yellow fever, dysentery, and cholera, at least prepare an ideal soil upon which these diseases can take root.

Yellow fever, plague, smallpox, dysentery, and the malarial fevers in their infinite and perplexing variety appear to be the diseases most to be apprehended at Martinique. All of these are capable of spreading with great rapidity and may become epidemic in this part of the world. Indeed, yellow fever is thought by some to be endemic at Martinique. According to last reports it was prevalent in Barbados, which is usually considered among the healthiest of the islands.

There is probably no disease more dreaded by the people who are subjected to it than yellow fever. It is particularly fatal to white people. Inasmuch as yellow fever haunts low-lying places in which marshes and decomposing organic matters are found, it is unfortunate that the island of Martinique, excepting for the highlands in the neighborhood of the volcano, should be low and apparently favorably situated for the propagation of this disease. Fort-de-France is its most unhealthy city. Yellow fever has been frequently epidemic in Martinique. Something like twenty-four epidemics have been recorded since 1688.

The danger from plague lies chiefly in the possibility that it may be brought in some manner from South America. Latest reports indicate that it may be in Brazil. From November 11th to March 2d last 105 deaths from plague occurred in the city of Rio Janeiro. Smallpox has been reported from Barbados and Brazil.

Under ordinary circumstances dysentery is one of the common diseases of Martinique and its vicinity and shares with malaria, with which it is often associated, the reputation of never being entirely extinct. It is probable that both dysentery and malaria, which are generic terms covering a number of diseases more or less alike and between which a clear distinction is not always evident, are both endemic. It is an unfortunate circumstance that the unhealthy season, the third and fourth quarters of the year, is close at hand. What has been said with respect to the prevention of yellow fever applies to the access of malarial fevers. The mosquito is to be regarded as the object against which unceasing warfare should be waged. As it will be practically impossible to undertake a crusade against the mosquito, particular attention should be given to collect the refugees as far as practicable from the haunts of this pest. High ground, the windward side of swamps and pools, and the avoidance of exposure at the times of feeding of the mosquito are measures which to some degree will be available.

It will, of course, be impracticable under the conditions which will obtain to exercise those measures of sanitation which science and a complete control of the people and the administrative power would make desirable. The best that can be done is to organize a sanitary corps as soon as possible and to begin the work of inspection and correction without any unnecessary delay. By the prompt coöperation of the various representatives and volunteer assistants sent from many sources, there seems no reason why an efficient sanitary organization should not be formed by the French authorities.

Having settled the questions of authority and cooperation, it will be desirable to establish headquarters and formulate a definite policy for the direction of the sanitary organization. The confidence and coöperation of the refugees should be encouraged from the outset. Much importance is attached to this point and to the desirability of distributing immediately and as widely as possible a knowledge of the purposes and methods, as well as of the powers, of the sanitary bureau. Secrecy as to the real condition of the public health,

[1] We have since learned that the "Dixie" has at the last moment taken a large consignment of Nestlé's condensed milk.

such as has been sometimes practised with regard to the identity and presence of communicable diseases, is not considered a wise policy; cases of illness should be reported by their proper names and announced as promptly and in as accurate a manner as possible. By this means, not only will the fear that epidemic and other diseases may be spreading beyond control be disarmed among the people at the scene of disaster, but the world at large will be greatly relieved of unnecessary apprehension.

A set of sanitary regulations for the guidance of the people may be issued to advantage, and should contain instructions as to the choice and use of food and shelter, the cleaning of living quarters, the repair of damaged household effects, the disposal of garbage and other wastes, especially excreta, and the methods of using deodorants and disinfectants.

With the idea of reducing the number of people to be cared for, as many as possible of those who are not usefully employed should be transferred to other localities. Guadeloupe, and especially the island known as Basse Terre, may offer some advantages for such transportation. At the same time it would be desirable to institute a quarantine system, although it is realized that the exercise of arbitrary authority in this direction may very easily lead to much trouble. The report that plague has for some time been prevalent in Brazilian ports gives to this element of sanitary regulation some appearance of importance.

One of the most important divisions of the work of the sanitary bureau should be the observation and direction of the refugees in their efforts to look after their own health. The people of the West Indies, in common with a large proportion of those who live in tropical and semitropical countries, have an astonishing disregard of the rules of hygiene. If practicable, a corps of responsible inspectors should be organized to move among the people in a systematic way to see that the regulations of the sanitary authorities are properly carried out and to supplement and interpret these directions by such sensible counsel and advice as can be given. Cases of disease which are capable of becoming epidemic should be watched for by these men with the greatest care, particularly in the overcrowded settlements and camps and in other places where the evils of congestion and uncleanliness of living are most liable to occur. When a case of infectious disease is discovered, the patient should be isolated and the premises disinfected as nearly in accordance with the practices commonly used in large cities as practicable. Hospital camps and isolation quarters will, of course, be needed.

The water-supply and food provided for the sufferers and helpers should be inspected systematically. Wells believed to be contaminated should be pumped out and either thoroughly cleaned or closed permanently. The etiological connection between epidemic diseases and infectious water-supplies should always be kept in mind. Water is dangerous not only when polluted by fecal matters, but also when it contains a large amount of organic extractives of vegetation or much saline matters. At this distance it is impossible to comment intelligently upon the procurement or protection of the sources of water-supply. Press reports indicate that it is very difficult to obtain water.

Of the great variety of the so-called disinfectants which will probably be sent to the scene of the wreck, the most useful will be quick-lime, chloride of lime, carbolic acid, creolin, and the organic peroxides of Novy. Although the public is tolerably familiar with the use of these chemicals, instructions should be given in the ways in which they may be employed to the greatest advantage. Particular attention should be given to the necessity of bringing about an intimate contact between the material to be treated and the disinfecting agent, the desirability of economy, and particularly the advantages to be gained by avoiding the necessity of using deodorizing and disinfecting materials.

Fortunately, the people of the Indies are accustomed to the use of whitewash, which, when freshly prepared, is one of the best disinfectants. Carbolic acid and also creolin, in five-per-cent. solution, are also effective. A hot solution of common washing-soda of about five-per-cent. strength is recommended as an excellent cleaning and germicidal solution. A strength of two-per-cent. soda in boiling water is suitable for tableware, dishes, etc.

In making a permanent disposition of decomposing or decomposible organic matters, as much use as possible should be made of the opportunities afforded for incineration. The bodies of horses, cows and other animals, and garbage and excreta may be easily burned if first sprinkled with rosin or oil. Bonfires may then be made over such material with fuel taken from the wreck. At Galveston a very large number of bodies were destroyed by fires which were kept continually blazing. In disposing of human remains, burial is to be preferred to burning, provided the graves or trenches intended for interment can be decently made and of a depth of at least six feet. All bodies disposed of in this matter should be placed in one locality which should be at least one hundred yards from any habitation or well. As far as possible excreta should be burned.

With regard to the removal of débris and cleaning about the scene of the wreck, it will be well to remember that the removal of infectious material or matters which are actually offensive or liable to become so does not constitute the whole duty to be fulfilled. An appearance of order and neatness is a condition greatly to be desired, since it makes for cleanliness and wholesomeness and is in itself an outward evidence of that control and moral support, which it is perhaps, after all, one of the highest functions of a relief organization to maintain.

CORRESPONDENCE.

TRANSACTIONS OF FOREIGN SOCIETIES.

British.

RELATION OF MALIGNANT AND RHEUMATIC ENDOCARDITIS—PRIMARY TUBERCULOSIS OF THE CERVIX SIMULATING CANCER—TUBAL PREGNANCY—FIBROMA UTERI—ANESTHESIA—CORTICAL GUMMATOUS MENINGITIS—THE CURE OF PULMONARY PHTHISIS—FAILURES AND SUCCESSES IN URINARY SURGERY—THORACIC HERNIA.

F. J. POYNTON and A. PAINE, at the Royal Medical and Chirurgical Society, April 8, 1902, read a paper entitled "A Contribution to the Study of Malignant Endocarditis." They had been led to study this subject during investigations of the pathogenesis of rheumatic fever. The relation between the two diseases is intimate, especially when the malignant endocarditis is associated with a previous rheumatic fever and during its course with manifestations of rheumatism. Since rheumatic valvulitis is known as "infective malignant endocarditis," a more accurate term would be "infective endocarditis." The question arises whether some of these malignant cases are not really rheumatic? The supposition is not new, but proof has been lacking because the exciting cause of rheumatic fever is not known. The evidence in favor of such cause being a diplococcus is now extremely strong. The results of recent researches have led them to conclude that there is a group of cases of malignant endocarditis of the

same origin as rheumatic fever, on the following grounds: (1) Clinical experience favors the assertion and clinical cases are obtainable in support of the statement; (2) the morbid anatomy of the diseases is also a proof; (3) bacteriological and experimental investigations also agree with the view, because the diplococcus can also be isolated from cases of malignant endocarditis and grows in pure culture, reproducing that disease in rabbits and resembling the diplococcus of rheumatic fever in its morphology and cultural characteristics. Moreover, this germ of rheumatic fever will produce malignant endocarditis in rabbits and the diplococcus from malignant endocarditis will produce rheumatic fever in rabbits. Finally, every grade of valvulitis, from simple to malignant and *vice versa*, could be produced by these two diplococci.

A. H. N. LEWERS, at the Obstetrical Society of London, April 2, 1902, described a case of primary tuberculosis of the cervix simulating cancer, treated by vaginal hysterectomy. The patient was married; thirty-six years of age; had never been pregnant; for nine months had had a bloody, offensive vaginal discharge with bleeding after coitus and after douching; had had pain in the left iliac region for five months, but not severe. The periods had been regular, three- to four-day type, without pain; the general health had been good up to a year before she came under observation. One aunt had died of consumption, but otherwise the family history was unimportant. On vaginal examination the condition of the vaginal portion of the cervix seemed to be identical with that found in many cases of cancer. Dr. Lewers performed vaginal hysterectomy. Recovery was good; about five years afterward the patient enjoyed fairly good health and had had no more bleeding. While in the hospital there was no evidence of disease in any other organ. Microscopical examination showed that the growth was tuberculous.

A. J. M. ROUTH showed a specimen of a Fallopian tube ruptured in two places near its fimbriated end. The woman was a multipara, twenty-five years old, six weeks pregnant, and had suddenly been seized with collapse and signs of internal hemorrhage. When the abdomen was opened the peritoneal cavity was found to be full of blood and the ovum in its intact membranes was found to be adherent to the edges of a rupture on the posterior face of the right Fallopian tube near its fimbriated end. The tube was ligatured, removed and found on examination to be ruptured both anteriorly and posteriorly. The patient rallied well and recovered fully. The tubal gestation sac measured 6 by 2.5 cm., tapered toward either extremity, making a more or less fusiform mass. Its walls were broken both anteriorly and posteriorly, one tear measuring 1 by 2 cm., and the other 2 by 2 cm., and both extending to within 2 cm. of the fimbriated extremity.

W. K. WALLS in behalf of A. WILSON and himself, at the Manchester Clinical Society, March 18, 1902, presented a woman with fibroma uteri, showing several interesting features. Three months previously the tumor caused much abdominal enlargement; it was multiple, each segment being about the size of two fists, and one occupied almost the whole pelvic cavity and bulged the perineum outward. The cervix could just be reached high up above and behind the symphysis pubis. The patient was, according to the history, four months pregnant; this condition showed doubtful physical signs, owing to the fibroid complications. Because of a recent and active infection with syphilis, for which the patient was treated, no operation was performed. A month later abortion occurred and a putrid six-month fetus was delivered with difficulty. In showing the convalescent patient to the society, the author directed special attention to the rapid postpartum involution. The retrovaginal tumor had shrunk to the size of a small orange and the others to a similar degree, so that the uterus and the tumors were now entirely within the pelvis.

B. GARDNER, at the West Kent Medico-Chirurgical Society, April 4, 1902, opened a discussion on anesthetics, recommending the use of a mixture of chloroform and ether in the proportion of one to two parts respectively administered on a Rendle mask. In his opinion this is the safest, most convenient and most suitable anesthetic for general use. He considers that chloroform is used more often outside the hospitals than has been supposed. It will be of great advantage, bearing in mind the difficulty of ether administration, to urge the use of the mixture referred to on account of the lesser danger of the second stage of narcosis. Under the influence of chloroform alone many deaths had occurred after the struggling, and it was to this factor that he wished to draw particular attention. His strong belief is that if no asphyxial factor be allowed to arise during chloroform narcosis, the accurate adjustment of the dose is a very simple matter. On the other hand, since chloroform is a paralyzer of the heart and since asphyxia acts also secondarily on the heart, a very moderate degree of the latter will turn the scale and produce a depression commonly ascribed to chloroform alone. Unrecognized obstruction to breathing is, in his opinion, the cause of most of the fatalities.

DR. CROWLEY read notes on a case of cortical gummatous meningitis at the Bradford Medico-Chirurgical Society, March 25, 1902. The woman was fifty years old; complained in October, 1899, of severe headache and vomiting; suffered, in June, 1900, several fits with convulsions involving the left arm and face without loss of consciousness. Examination revealed tenderness to percussion in the right frontal and parietal regions with some muscular weakness of the left side of the face; commencing optic neuritis on the right side. Under iodide of potassium she improved sufficiently to go to a convalescent home in July. On August 15th she was again admitted to the hospital with headache, vomiting and twitching of the mouth on the left side. Iodide of potassium and mercury were given and by November 1st she was well enough to go home. She relapsed again in about one month and again improved under treatment. In May, 1901, her symptoms were again present and intense and in July of that year J. B. Hall trephined, but no tumor was found. Both the headache and vomiting were completely relieved by the operation, but three weeks afterward complete paralysis of the left side of the body appeared. She died six months after the operation. Postmortem investigation revealed an extensive tumor occupying the surface of the brain and involving the frontal and parietal regions, adherent to the dura mater and penetrating far into the brain substance. Apart from this the brain was normal and there was no meningitis. As to whether an earlier operation would have relieved the condition, he considered that the symptoms were due not merely to gumma, but also to syphilitic changes in the surrounding vessels; consequently the operation could not very well bring about a cure.

E. DUNCAN, at the Glasgow Southern Medical Society, April 3, 1902, reviewed the treatment of pulmonary consumption from the earlier part of the nineteenth century to the present time. He pointed out that open-air treatment, so much lauded to-day, was advocated in England by G. Bodington in 1840. Particularly as to the curability of phthisis, he gave a detailed account of cases seen in private and hospital practice and undoubtedly cured. He had known patients in whom there had been found all the signs of consolidation and excavation with numerous bacilli in

the sputum to be completely restored to health and strength. With regard to treatment he believed that a persistent germicidal course was very efficacious indeed, as follows: Carbonate of guaiacol in large doses, creosote with cod-liver oil (5 minims to the dram); inhalations of pinol and eucalyptol, and, in the absence of catarrh of the bronchi, formalin solution in 10- to 20-per-cent. strength. Diet, he said, should be forced. Four pints of milk a day should be added to the ordinary fare. Much can be gained by mere open-air living, he always insists upon it.

H. LUND, at the Rochdale and District Medical Society, April 3, 1902, discussed the question of failures and successes in urinary surgery. He described cases illustrating the difficulty caused by a large lacuna magna in catheterizing and in treatment of gonorrhea, the distensibility of the female urethra for the removal of stones, the evils of white wax in urethral bougies, and the advisability of sounding the bladder when performing circumcision in children. The danger attending even such a simple operation as circumcision was emphasized by reference to the case of an old man who had cerebral hemorrhage with hemiplegia the day after circumcision was performed. Enlarged prostate gland could be relieved sufficiently by careful catheterization. The advantage of operation was immediate and sometimes only temporary. Freyer's operation probably really consisted in the removal of an adenomatous mass which compressed the prostate. The suprapubic operation was best in all cases of vesical calculus. Syphilitic ulcers of the bladder are difficult to recognize, but yield to appropriate treatment. Varicocele is best treated by the open method with excision of a length of vein. The most certain cure for hydrocele is excision of the sac. His points were illustrated by case histories and he closed his paper by mentioning cases of renal calculus, hydatids of the kidney, and one of intermittent hydronephrosis treated by nephrorrhaphy in which a large granulating surface was left and the patient kept on his back for three weeks with a successful result.

H. P. MILLER showed a specimen of thoracic hernia at the Esculapian Society, April 4, 1902, removed from a child two and a half years old, dying ten hours after the first symptom, vomiting. The hernia consisted of eight feet of large and small intestine, occupying the left chest, displacing the heart to the right side, occurring through an oval, smooth-edged, elastic opening one and one-half by three-quarters inches in diameters, situated in the left leaf of the diaphragm nearly at its lateral center and toward the spine. There was no known strain to account for this hernia. The small bowel was deeply congested.

BEAUTIFUL BERMUDA.

NOTES FROM A LAND OF BLOOM AND BALM.

To the Editor of the MEDICAL NEWS:

DEAR SIR: Rocked in the cradle of the deep, 700 miles equi-distant from New York and Savannah, is a cluster of coral isles on which has been lavished a bounty so ample for the bettering of human ills, and a witchery of charm so plenteous for those questing pleasure alone that little wonder her bardic admirer was moved to sing—

"The wandering mariner whose eye explores
The wealthiest isles, the most enchanting shores,
Views not a realm so beautiful and fair,
Nor breathes the spirit of a purer air:
By the gay borders of Bermuda's isles
Where spring, with everlasting verdure smiles."

Truly, 'tis an enchanted land—where the real rivals the ideal, and fact matches fancy, after conning the story of these evergreen isles—of whose beauty, so unique, one can form no full idea till a sojourn is made 'mid its verdant fields and flowers galore. To most Americans, doctors included, Bermuda is practically an unknown land, and few realize that forty-eight hours from New York is a winter Eden; a lovely land, where flowers bloom the year round out of doors, where malaria never comes, where frost and the white mantle of winter are unknown, and where sleep-giving, health-bringing breezes, the panoramic beauty of sea and shore, and the quiet, restful, lotus-land-like life combine to make halcyon days.

The country, shaped like a shepherd's staff, is about twenty miles long, and from three-quarters to three miles wide. The area is sixteen square miles. The population is about 16,000, five-eighths being black. Hamilton, the leading town, has 2,000 inhabitants. There is little poverty. We never saw a beggar.

The health of these islands is almost always good. A healthful October presages a healthful winter. Protected and favored by the Gulf Stream, they enjoy a happy mean twixt heat and cold, ranging, usually, from 50° in winter to 85° F. in summer. The average for 1900 was 69.09° F., making Bermudians claim their climate—which is said to be like that of Persia—the most equable in the world; a claim that temperature tables, including the more variable ones of our most noted winter resorts—Jacksonville, St. Augustine, Los Angeles and San Diego—fully attest. There has been no epidemic in many years. The greatest mortality is under five. Long lives, eighty-five to ninety-five, are not uncommon. An ultra-centenarian was gathered to her fathers not long ago.

Two health officers, one at Hamilton, the other at St. George, enforce quarantine regulations, which are careful and complete.

Dr. Eldon Harvey is the Medical Officer of Health. From his last report, 1900, interesting statistics are at command. Births were 597—203 more than deaths. The death-rate was 21.03 per thousand. Enteric and chest cases led the list. Scarlet fever was brought twice and variola once, but prompt action prevented spread. Phthisis ranked first, and was three times greater among the blacks. The same ratio was noted in tetanus. The reverse obtained in cancer, nearly double in the white. Four of the Army Medical Corps having been ordered to Africa, Dr. Harvey volunteered for local service, and noted some points of interest touching malaria. Many soldiers came from the Transvaal ill with ague and its effects. Under changed climatic conditions they steadily improved, and by the close of the year the disease was almost wholly ended. Remittent fever in any form is unknown in Bermuda and those finding it elsewhere lose it here. Specimens of the Bermuda mosquito were examined at the British (Natural History) Museum and found harmless. The malaria-bearing brand is not here. From this study and from that of the yellow-fever epidemics here in 1843, '53, '56 and '64, he concludes: "The mosquito is far more dangerous and more deadly to man than the most poisonous snakes or the fiercest lions or tigers."

In 1894, through the effort of Dr. Harvey, a cottage hospital was opened a half-mile from Hamilton. Nine-tenths of its cost was given by Americans. Under his zealous care, it has prospered and proven a boon to tourists and town-folk alike. Last year an operating-room was added, which is aseptic to date, the floor and walls being tiled, and the equipment of white-enameled iron and glass, with plated mountings. An isolation ward will be added this year. The hospital is in charge of trained attendants, whose skilled service is at command of any when not on hospital duty. Great credit is due to Dr. Harvey for this good work.

Through the courtesy and under personal escort of

Major Morrice, of the Second Warwickshire Regiment, commanding forces guarding the Boers—of whom more than 4,000 are now laagered on five islands not far from Hamilton, I was given the privilege (no longer granted; I was the last civilian so favored) of visiting the captive camp. I talked with many, noted their food, their clothes, their sanitary surroundings and hospital care, and say—briefly, now, more, in detail, later—that the stories started by sensation mongers in some American journals anent poor food, bad clothing, much sickness and great mortality among the Boers in Bermuda are not true.

Through the kindness of Major Edye, one of the most accomplished medical men in English service—whose special courtesy to me it is a pleasure to mention—who has charge of the Prisoner of War General Hospital on Port's Island, which has 200 beds, I learned many facts of interest. There are 4,509 prisoners, ranging from nine to seventy years, and about 700 soldiers on guard, under his care. He has two assistant surgeons. Prisoners ill are at once sent to his hospital. Troops sick are treated in a hospital marquee on the islands they guard for from two to four days, and then, if not improved, are taken to the military hospital on the mainland at Hamilton. Port's Island is entirely a general hospital, the medical corps living on it and no others, save a telephone operator, a small guard and four press censors, who read about 5,000 letters for each mail.

The hospital was opened in June, 1901. Ground was cleared, two huts built and space made for fifteen marquees and twenty bell-tents. Each marquee has six beds, and one hut has thirty-two. Each bed is well supplied with spring wire and horsehair mattress, counterpane, blankets, sheets, bolster and pillows. A launch runs to all the islands each afternoon to bring to hospital any new cases. Patients are seen morning and night. Serious and fatal cases are recorded in detail. Each patient has a diet the same as the British soldier in a military hospital in time of peace. The dietary is ample and varied, and right here it may be said that the Boer, not ill, gets exactly the same food as the English officers and men, with the privilege of buying extras, at fair cost, if desired. The sanitary and surgical equipment is complete. The death-rate has been notably small; 951 cases having been admitted, with only 12 deaths. Every Friday a cablegram goes to Africa, giving details to friends of captives who are dangerously ill. Surely, this is a record generous and humane.

Bermuda is beautiful. Here is Nature's great sanitarium, but not for all. *Bermuda is not the place for consumptives* nor for any advanced in wasting disease. For insomnia it is unique to do good; many hapless mortals tossing in wakeful nights find it a peerless place to woo and win the good angel of sleep. It is a happy land for the neuralgic and those coming back to health from acute disease. For the weary and worn, for tired pilgrims along any line—be it brain or brawn—it is, indeed, a Mecca to which they can come with high hope of getting rest and relief.

I have been abroad again and again, but nine outings here have put me quite *en rapport* with the many charms—scenic, thermic and floral—that make Bermuda, to me, the most restful place on earth.

J. B. MATTISON, M.D.

Hamilton, Bermuda.

American Therapeutic Society.—The third annual meeting of this Society was brought to a close Thursday afternoon after a most interesting session. The following officers were elected for 1903: President, Dr. T. A. Satterthwaite, of New York; 1st Vice-President, Dr. H. Barker, of Washington; 2d Vice-President, Dr. Osborne, of New Haven;

SOCIETY PROCEEDINGS.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, Held April 17, 1902.

The Vice-President, Dr. Virgil P. Gibney, in the Chair.

THE scientific business of the evening consisted of a symposium on the

DIAGNOSIS AND TREATMENT OF SMALLPOX.

Symptoms of Smallpox.—Dr. S. Dana Hubbard said that smallpox is a disease characterized by a very typical eruption on the skin and mucous membrane; this latter point is not always realized. The mucous membranes affected are usually those of the respiratory tract exposed to the air; at times, however, an eruption of smallpox may occur on the mucous membranes of the bladder, uterus, and intestinal tract. Mild smallpox is sometimes spoken of as varioloid, giving the impression that it is a different disease, and in so far it is a misnomer; like the word scarlatina, varioloid should be dropped. Cases usually designated thus may be called mild discrete smallpox, but not varioloid. The incubation period of the disease is twelve to fourteen days and the invasion takes from two to four days. The rash is usually well out by the end of the third day or the beginning of the fourth. One of the first symptoms of the disease is usually a very severe backache, commonly in the lumbar region, but possibly as high as the angle of the scapula, or only over the sacrum, and it may extend to the legs; it is usually accompanied by a very severe headache which is felt especially above the eyes. In children the period of invasion is often marked by a convulsion. Before the eruption appears the face is apt to be swollen and congested and epistaxis and sore throat are not uncommon. At times there is a characteristic rubescence. This precedes the typical smallpox exanthem which does not appear until late on the third or the beginning of the fourth day. The first eruptive lesions are apt to be noticed on some specially irritated part, as where the skin has been macerated by the perspiration of the fever. The back is the best place to observe the lesions for diagnostic purposes, since there the development is not disturbed by scratch marks. Lesions on the hand are not so characteristic because the hands are apt to be swollen and congested.

Development of Eruptions.—The lesions appear first as macules, lasting from eight to twenty-four hours. The macules are larger than the papules that appear later and form the areola surrounding the macules, which later become entirely lost in the papules. The papules roll like shot beneath the finger and seem to be in the skin itself; they are sometimes seen in varicella, but the halo that surrounds this lesion is wider than that of smallpox and the papule does not necessarily occupy its center, as is almost always the case in smallpox. The papules develop into vesicles having a firm, dense base. These vesicles are quite firm and do not break easily unless they are macerated by the perspiration due to heavy flannels. It is sometimes said that the occurrence of a mixed rash, consisting of all forms of lesions from papules to dry, crusted papules, is pathognomonic of varicella. This is not true, though the mixed rash cases are very rare in smallpox. It is not so uncommon, however, to see vesicles on the head when there are papules on the body. The lesions are umbilicated in the vesicular stage and pustulation occurs about the eighth day. As the result of the development of the lesions on the mucous membrane the tongue may become swollen and swallowing may become impossible. About this time, too, the patient is apt to be

hoarse from laryngeal involvement. The pustules of smallpox do not break of themselves, but gradually dry up into scales and fall off. Beneath the thick skin of the palms and soles the inflammatory material surrounding the pustule is imprisoned and may have to be dug out, as it is infectious material.

Hemorrhagic Fulminant Smallpox.—At times there are fulminant cases of hemorrhagic smallpox in which none of the usual stages of the disease may appear; it kills before the rash makes its appearance. In more prolonged cases the papules pass to the pustular stage without becoming vesicles. In a recent case of this kind at Bellevue Hospital, the patient, a colored man, had bleeding from the nose, eyes, mouth, rectum and penis, besides high fever, and he was in a comatose condition. He died in four hours. Some years ago a city diagnostician saw a case of this kind and isolated it because he suspected typhus. When the eruption appeared it was at first not unlike that of scarlet fever; later characteristic shot-like papules appeared, but in the midst of macular hemorrhagic lesions very dark in color, and the patient died before the disease had proceeded any farther.

Differential Features of Smallpox.—Dr. S. Pollitzer said that the early diagnosis is not more important in any disease than in smallpox. Diagnosis may be simple, difficult or impossible. It may be readily made if the affection be typical; it is often impossible when complications are present or during the pre-eruptive period. In suspicious cases it is a good rule to look for a vaccination mark, and if there be none the patient must be regarded with suspicion. The preliminary rash is either scarlatiniform or morbilliform in character. The differentiation from scarlet fever or measles, however, may be made by the absence of the characteristic angina of scarlet fever and the catarrhal symptoms of measles. The appearance of the rash, especially in scarlet fever, is followed by a decided remission of the symptoms which does not always take place in smallpox. This preliminary rash, usually of rubescent character, disappears in from eight to ten hours; this, of course, does not happen in scarlet fever. Very early in smallpox petechiæ sometimes occur on the back, but only in very severe cases. Cerebrospinal meningitis may give the severe backache so characteristic of incipient smallpox, but the macular lesions of the disease have a tendency to appear with an irregular distribution in successive crops. Moreover, almost at the beginning of the disease a spasmodic condition of the muscles, with throwing back of the head and stiffness of the neck, develops.

Cryptogenetic Sepsis.—This is a type of disease that might not be considered confusable with smallpox, but it has sometimes been confused. In a case recently seen by Dr. Pollitzer the patient was a young woman of thirty, non-vaccinated, who on the sixth day of an illness that had been accompanied by severe backache and fever had hemorrhages from the uterus and a scarlatiniform rash. The conjunctivæ developed an ecchymotic condition and the illness was of fulminant type. Hemorrhagic smallpox was suspected, and when death took place this seemed the most likely cause. At autopsy, however, the woman was found to be suffering from a septic endometritis and a number of septic emboli were found all over the body.

Premonitory Symptoms.—In the midst of an epidemic the premonitory symptoms of smallpox may have some value as calling attention to and arousing suspicion of the character of the disease; when other infectious febrile diseases are prevalent at the same time, however, these early symptoms can have very little real diagnostic value. Grip, for instance, can simulate smallpox by producing pains in the back, headache and muscular and bone pains; rheumatism may also simulate smallpox in this way.

Confusion with Other Forms.—Measles and varicella were confounded by physicians until separated by Sydenham. It is not difficult to separate them once the rash of measles appears; this usually occurs on the fourth day, while the smallpox rash appears at the end of the third day. A more difficult differentiation is that between varicella and variola; as a rule, the vesicle of varicella is much more superficial than that of variola and is covered by a thinner membrane; when the roof of the vesicle is ruptured the vesicle collapses. This does not happen in smallpox because the smallpox vesicle is multilocular. The vesicles of varicella occur very rarely on the palms or soles; in smallpox these parts are practically never exempt from lesions. The diagnostic importance of the lesions of the palms and soles has been underestimated; if these regions be free from eruption, the disease is usually not smallpox. The bromides and iodides give rise to a rash which, in its early stages, resembles that of smallpox, but there is little liability of confusion. This rash is not accompanied by fever and does not occur on the palms and soles where there are no sweat-glands. The most important ailment that must be differentiated from smallpox and has often caused mistakes because of its close resemblance is the pustular syphilide; good authorities in cutaneous diagnosis, insist that it may be absolutely impossible to distinguish this disease from smallpox, except after several days of careful observation. The pustular syphilide is usually accompanied by a febrile movement. The remission that occurs in smallpox after the rash is out does not occur in the pustular syphilide; the lesions are more sluggish in their development. While the palms and soles may be affected, lesions are usually not present on these surfaces. In a certain number of cases smallpox may be so mild and its lesions so sparse as to make the diagnosis very difficult. The existence of recent, positive vaccination removes suspicion of the character of the disease. Negative vaccination, however, does not give significant evidence.

Treatment of Smallpox.—Dr. George H. Fox said that, while many remedies have been suggested for smallpox, it is now generally conceded that no remedy will abort the disease or lessen its severity, and no general set of remedies can be outlined that will be suitable even for the symptomatic treatment of cases at all times. Careful nursing and individual attention are the requisities. For very light cases, such as occur in patients who have already had smallpox, for second attacks of the disease are not so rare as has been thought, and for those that occur after vaccination, very little treatment is required. At times very light attacks of smallpox occur, even among non-vaccinated persons who have been previously healthy. In the malignant form of smallpox, treatment is useless. The successive stages of the disease in the severer form require varying treatment.

Prophylaxis.—Prophylaxis consists in general in vaccination, because as a rule smallpox comes as a surprise. Vaccination after exposure to smallpox undoubtedly does good, but there is a difference of opinion as to whether it is always absolutely protective; the balance of authority favors the idea that if it does not give immunity it causes the smallpox to be much lighter. Some people say that vaccinia and variola may run their course side by side when the variola is already in the system at the time the vaccine material is introduced. Welch, of the Municipal Hospital in Philadelphia, says that vaccination performed immediately after exposure protects materially and may prevent the development of smallpox. Vaccinia has an incubation period of eight days, variola twelve days. The protec-

tive of the first may anticipate the invasion of the second. Secondary vaccination runs its course more rapidly than primary vaccination, so that in people already vaccinated some years before there is greater hope of anticipating smallpox. Humanized virus runs a more rapid course than bovine material and is more uniformly successful, so that it may be employed late in the incubation period of smallpox. After all, this incubation period may be delayed up to the fourteenth day or even longer. Vaccination may do great good and can do no harm.

Remedial Measures.—There is no specific remedy for smallpox. Hygienic measures are very important. A warm bath should be given at the beginning of the disease and the patient thoroughly cleansed; if the case be mild this bath should be repeated daily; if severe a sponging all over the body should be given daily. If the eruption threaten to be severe the hair and beard should be clipped in the beginning. If the case be mild, however, young women need not be asked to sacrifice their hair. For the headache an icebag or cold cloth frequently renewed may be placed on the head and will give great relief. This will not suppress the eruption as has been frequently said. Warm applications are most suitable for the relief of lumbar pains; mustard poultices should not be used, however, as they serve only to make the patient uncomfortable and do no good. They bring out a good crop of lesions on the back, but the theory that the more lesions there are elsewhere, the more the face will be spared is not true. For the sore throat so commonly an early symptom in smallpox, cold milk and ice are good. After the eruption comes out patients usually feel so much more comfortable that they are apt to go about their business as if well. Local treatment of the lesions does not arrest them nor prevent pitting. The use of a mercurial plaster, so often recommended, is more uncomfortable than beneficial.

Phototherapy in Smallpox.—Very long ago, in the fourteenth century, John of Gaddesden recommended red curtains and red walls for the rooms of smallpox patients. Sunlight was thought to aggravate the symptoms. A dark room was advised, partly, of course, because of the photophobia so common in the disease. When this treatment was first applied air, as well as light, was excluded from the room and the patient was nearly smothered. Part of the theory on which the supposed aggravating effect of light is founded, the fact, for instance, that the hands and face are not apt to suffer so severely, is not substantiated. The feet are apt to have as many lesions as the hands. Unna and Finsen showed that it was not the heat of the sun, but the ultraviolet rays of the spectrum which affected the skin and caused sunburn, while the use of red light was soothing for cutaneous lesions. Finsen has employed red light in the treatment of smallpox and has reported a certain number of cases with excellent results. At times the disease skips from the vesicular stage to convalescence, and especially without the severe secondary symptoms of the pustular stage. Red light was tried at the Riverside Hospital on North Brothers Island, but, the results proving unsatisfactory, it was given up. In 1893 red windows were put into one of the wards, but this seemed to have no effect, for, while all the cases were mild, this was usual in the epidemic of that year and all of them ran the usual complete course of typical smallpox cases. Dr. Cyrus Edson has data with regard to this experiment, but owing to the fact that it was a failure has not published the results. It is perhaps unforunate that it is always the enthusiast who writes on medical topics, while the skeptic and unsuccessful experimenter remain silent; the profession, however, should be enabled to know both sides.

Diet and Care.—The patient should be given a nutritious diet, and, especially in the secondary stage when the appetite is apt to be very meager, should be fed at regular intervals. In severe cases when there is stupor, the patient should be aroused from it in order to take nourishment. The natural sleep that comes just after the height of the disease should not be disturbed, however. During deljrium it may be necessary to have recourse to rectal alimentation; before employing this the rectum must be cleansed thoroughly with soap and water. It is rather important that the mouth should be kept extremely clean; pyrozone or borolyptol or listerine in dilute solution, or some other mild antiseptic, should be employed two or three times a day. The cauterization of the pustules with silver nitrate is as useless as it is painful; it is too late to prevent pitting once the pustular stage has been reached. Something can be done by reducing inflammation before pustulation sets in; for this the cold compresses suggested by Hebra are grateful and useful, and it is doubtful if any other method does more good. Pieces of lint may be wet in cold water to which, if drying be too rapid, a little glycerin may be added, or the pieces may be covered with oiled silk.

Painful Conditions and Subsequent Treatment.—If the pain in hands or feet be very severe it may be necessary to immerse the members; if the pain be more general it may be necessary to keep the patient for a good part of the day in a whole bath. When the crusts begin to come off, carbolized vaseline should be used very freely for inunctions. For variola verrucosa, the form which leaves warty elevated lesions after the disease has run its course instead of the usual pits, applications of tincture of iodine are good. A 20-per-cent. resorcin solution in rosewater has also been known to do good.

Latent Smallpox Macules.—Dr. Fox then showed a series of illustrations of smallpox cases with the stereopticon; the first being a picture of a smallpox patient in the macular stage. This is the only picture of this kind that Dr. Fox knows to be in existence. In showing the series of pictures Dr. Fox remarked that he used to think he could decide from the appearance of a smallpox patient the stage of the disease; he now knows that while in general this is true, no definite decision can be made since patients often present very different stages on the same day of the disease. The illustrations show how smallpox lesions have a tendency to group themselves closely at irritated points, as beneath the hat band, under the cuffs at the wrists, where the shoe laces are tight and underneath tight garters.

Unusual Cases of Smallpox.—Dr. Dillingham said that smallpox is of sufficient importance to discuss even the unusual cases, and as in these is the great difficulty of diagnosis, they are more important than any other type of the disease. The incubation period is said to be from twelve to fourteen days; it is often longer and he has once known it to be seventeen days. The first patient in this series of cases was landed from a steamer on Swinburne Island; those who had been with him were confined on Hoffman Island and came down with smallpox on the sixteenth or seventeenth day after quarantine. Cases have been reported with an incubation period of twenty-one days. The period of invasion is said to be three days, but at times the first symptom of the disease is the eruption. Contrary to the usually accepted opinion, vesicles, papules and pustules of smallpox may occur in the same area of the patient's body. Some years ago a case of this kind, seen by a number of experts, was declared not to be smallpox because of the mixed lesions, but other members of the family came down with true smallpox. The lesions on the mucous membrane always occur at the

same time as on the skin, therefore it is important to examine the mouth.

Malignant Forms.—Malignant smallpox may be differentiated from malignant scarlet fever by the fact that hemorrhages from the conjunctiva are seen in smallpox, but not in scarlet fever. The color of the hemorrhagic lesions is deeper, more mahogany-like, than in malignant scarlet fever. Some confusion may arise because of the prodromal erythema. This occurs in smallpox only in the groins and axillæ at first. Needless to say, this is not the location of the primary erythema of scarlet fever or measles, which usually affects the face. A fall of temperature after the eruption may be looked for, but does not necessarily occur in smallpox.

Supposed Pathognomonic Symptoms.—The vesicles of smallpox may be just as superficial at times as those of varicella. The first lesions seen may be vesicles and not macules. Dr. Dillingham was recently called to see a patient at Bellevue suffering from sore throat with some vesicles on the neck; in the evening there were typical smallpox papules. Lesions of the palms and soles may be absent in smallpox and may exceptionally be present in chickenpox. No single lesion is differentially pathogonomonic of smallpox.

Serum Treatment.—Dr. Huddleston said that serum has been found in the body of animals two weeks after vaccination which is curative for smallpox. It must be given, however, up to $^1/_{100}$ of the body weight in order to be curative. This would make for the ordinary sized man a pound and a half of serum. As to the protection afforded by vaccination, nurses and doctors freshly vaccinated at North Brothers Island do not take the disease. Cabot of Boston collected a series of cases from the literature, according to which it would seem that there is a special blood picture for smallpox. Investigations made by the New York City Board of Health, however, do not show this. A series of inoculations of monkeys have been made by the Board of Health with the idea of demonstrating with assurance that monkeys are susceptible to smallpox and not to varicella. The observations seem to show this and these animals may be used for the purpose of deciding whether a doubtful case is variola or varicella, thus avoiding the exposure and consequent epidemic that has often proved so serious in this country.

In closing the discussion, Dr. Hubbard said that he has seen a multiform rash consisting of macules, papules, pustules and scabs on the same patient. He thinks smallpox wards should be kept warm in order to avoid the pneumonia that may occur from the respiratory irritation uniformly present when smallpox is in the system. Undoubtedly the blood diagnosis will be of help in future epidemics. The serum treatment of smallpox seems to Dr. Hubbard to have a most promising future.

NORTHWEST MEDICAL SOCIETY OF PHILADELPHIA.

Stated Meeting, Held April 1, 1902.

The President, Wendell Reber, M.D., in the Chair.

Scientific Treatment of a Few Diseases of the Heart.—Dr. I. Newton Snively in a paper on this subject laid great stress upon the importance of an individual study of the general condition of each patient showing cardiac lesions, especial attention being directed to the condition of the kidneys. In the author's opinion no heart medicine is needed if the myocardium be able to perform its work in a satisfactory manner, and more consideration should be given to the heart muscle than to the heart murmur. Rest in bed for a sufficient length of time to allow the myocardium to regain its normal condition after any severe diseased process, was particularly remarked upon, and among the most important therapeutic agents in the treatment of cardiac conditions, rest in bed and properly selected diet were mentioned, together with the use of blood tonics in order to restore the blood to its normal condition. Physical exercise and light gymnastics were also thought to be of value in properly selected cases. In treating the acute infectious diseases the importance of preventing myocardial weakness by medicines tending to eliminate poisons from the system was noted, and as heart stimulants to be used in conjunction with rest in cases in which a weakness of the myocardium is manifest, strychnine, caffeine, digitalis, and alcohol were recommended.

The discussion was opened by Dr. Judson Daland, who also expressed the importance of individualization in cases of cardiac disease. He then remarked the weak action of the heart in typhoid fever, directing particular attention to the fact that in these cases the ordinary symptoms of cardiac weakness are not present, the conditions most impressing the observer usually being the feebleness of the muscular element of the first sound, which is particularly important not only as indicating the general condition of the myocardium, but also the condition of the circulation, and acts as an important guide to general medication. In the speaker's opinion, toward the end of the third week in typhoid fever there is a widespread change in the muscular organism of the heart; digitalis in this condition has not been of very much value in his experience, which he felt probably could be accounted for by the fact that there was a febrile process at work and widespread dilatation of the blood-vessels. The value of rest as a therapeutic agent in these conditions was considered, and in conjunction with this properly arranged massage and Swedish movements were recommended in order to stimulate the flow of the blood in the veins and thus produce a balance of circulation. Reference was made to excessive muscular exertion operating as a cause of hypertrophy of the heart, and the history of a case in which a man, who began shoveling sand into a cart at the age of four years and who was suffering from an extreme manifestation of this condition at the age of twenty-four, was given. This case was particularly interesting as the fact established by reliable measures that the ordinary causes of hypertrophy, such as syphilis, alcoholism, etc., were absent.

Ophthalmologist and the Clinician.—Dr. Thomas H. Fenton stated that he believed much valuable information could be gained in cardiac and vascular conditions by the working together of these two, ophthalmoscopic observations revealing many conditions of the arteries and veins which are valuable adjuncts to the physician in the treatment of his patient.

Condition of the Myocardium.—Dr. Howard S. Anders considered this the most important factor in the treatment of cardiac disease, and also, in his opinion, one of the most difficult of diagnosis. Regarding hypertrophy and dilatation of the heart, he felt that, while these two conditions usually occur in conjunction, the greatest difference in the apparent general condition of the patient is observed, depending upon which of the two is predominating. As a rule when hypertrophy predominates the patient remains in fairly good health, while the reverse is true in cases in which dilatation is the predominating factor. Attention was called to the importance of making a thorough physical examination in all cases, and particular stress was laid upon the position and character of the apex beat, the area of heart dulness and the character of the sounds of the heart; and, in the event of any of these condi-

tions being discovered at a time when the patient is under treatment for some other disease, preventive measures were recommended. The value of maintaining a balance of the peripheral and venous circulation in order indirectly to relieve the heart of a certain amount of labor was commented upon. In cases in which the cause of the condition is apparently toxemic, it was recommended that the activity of the skin, kidneys and other excretory organs be stimulated and in cases of marked "right-sided" stress the use of mercurials, calomel or blue mass was thought to be of value. Hydrotherapy was recommended and it was felt that cold baths could be employed advantageously in nearly every case, by gradually reducing the temperature of the water and allowing the patient to remain in the tub for only a few seconds—just long enough to get the shock.

Dr. Samuel Wolfe considered that many of the cases of dilatation of the heart are due to malnutrition, and felt that the toning up of the general condition of the patient, particularly the nervous and muscular systems, would in many cases produce good results. The speaker inclined to the opinion that in many instances the physician is too hasty in insisting upon the patient's giving up his occupation and limiting the amount of exercise. While there are no doubt numerous cases in which these directions are necessary, the speaker felt that in a far larger majority it was much more important to prevent worry and regulate the diet, and unless the lesions had progressed pretty far he did not think the physician was justified in ordering cessation of all work. Rest in bed, if not too long continued, was thought to be of value in certain cases and methodical muscular exercise, carefully regulated by the physician, was recommended in suitable cases. The use of cold baths was considered of value and the belief expressed that cold sponge baths could be employed to advantage in almost all cases.

Dr. W. E. Robertson expressed the opinion that the most important factor in these cardiac cases was the condition of the heart muscle, and remarked upon the value of the position of the apex beat as an aid in diagnosis. The use of a line dropped from the center of the clavicle, instead of from the nipple line, which varies more or less according to the age, sex, and health of the individual, as the normal position of the apex beat, was recommended. The importance of preserving the balance of circulation was commented upon and this was thought to be especially illustrated in children, in whom the same symptoms of cardiac disease are not found as in adults. Failing compensation in adults is usually accompanied in its inception with some cyanosis and some edema, while in children neither of these conditions is common and, if present at all, it is only to a slight degree, the predominating symptoms in the latter class of cases being progressive pallor and asthenia. Rest in bed was thought to be one of the most important therapeutic measures, and the belief was expressed that the continued use of digitalis would in itself produce hypertrophy, a case being cited in which the patient had used this drug continuously for twenty years prior to his death, at which time the organ weighed two and one-half pounds. While the value of calomel in right-sided heart failure was not discounted yet the speaker felt that better results would probably be obtained from phosphates and the salicylates.

Dr. Judson Daland made a few remarks with reference to the anatomical condition of the heart in mitral regurgitation (non-inflammatory) secondary to dilatation, the discussion being closed by Dr. Snively, who urged upon the members the importance of improving the general condition of patients suffering from cardiac disease.

MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Stated Meeting, Held April 14, 1902.

The President, Andrew H. Smith, M.D., in the Chair.

High Degree of Myopia Cured by Operation.—Dr. Edward Fridenberg presented a patient on whom he had operated for the relief of a high degree of myopia, producing an artificial cataract by decision, and removing the cataract. In this instance a second decision had been required. The result had been completely successful, and the patient had been enabled to resume his work. The operation was considered unjustifiable, the author said, (1) when one eye is blind; (2) when there is evidence of active inflammation in the fundus (involving the choroid or retina); (3) in patients over forty years of age, though this was somewhat doubtful.

The Present Status and Technic of Radiation Treatment and the Indications for its Use in Malignant Disease and Other Conditions.—The paper of the evening was by Dr. Wm. J. Morton, on this subject. The therapeutic aspects of X-rays, except for purposes of diagnosis, have been of slow development, though it is now admitted that the X-ray has cured cases of every known form of malignant growth, lupus, eczema, psoriasis, prurigo, acne vulgaris, sycosis, favus and rosacea. It is particularly in those affections least amenable to our former treatment that this agent is most successful. It is known to have cured tuberculous foci and it promises much in the treatment of tuberculosis. It also has a remarkable effect in relieving pain, it assists in healing burns, wounds, ulcers and sores, and there would seem to be great likelihood of its being able to cure leprosy. Its specific influence upon life processes is most openly manifested when exerted upon the integument; but repeated laboratory experiments have shown conclusively that small animals like mice and guinea-pigs, weeks after irradiation, suffer internal structural changes which even end in death. The point here emphasized was that radiotherapy is by no means to be confined to exterior conditions, but is equally applicable to diseases of the interior; there is even a bactericidal action.

An Unknown Therapeutic Agent.—Dr. C. L. Leonard of Philadelphia believed that in trying to find out the why and wherefore of the matter one would eventually get down to a scientific basis. All that can be said at present is that the employment of an unknown agent in an empirical method has resulted in the production of beneficial results in cases of malignant disease. Similarly, the application of the electricity developed by the static machine or the induction coil, in the production of Roentgen rays, but without the Roentgen ray tube or generator, has resulted in the production of equally beneficial results. Since these results were produced without the Roentgen tube, the therapeutic agent must be considered some other than the Roentgen rays, until they have been shown to possess additional therapeutic value. It is highly probable that the therapeutic agent is electricity employed in this form, since the experimentation of reliable men has demonstrated that electricity modifies the growth of malignant disease. If the successful treatment of all superficial and deep-seated malignant growths is to be developed along this line of therapeutic progress, the actual agents employed must be recognized, and their separate value determined. He was somewhat skeptical as to whether disease in different depths of the body could be reached. He had never seen a burn appearing on the opposite side of the body or of a limb from that which had been subjected to irradiation.

Early and Radical Operation the Most Efficient Method of Treatment in Malignant Disease.—At

present, the most efficient method of treating malignant disease is the early and radical removal of all suspicious tissue by surgical operation. The diffusion, in the lay and medical press, of the opinion that all forms of malignant disease can be cured by radiation treatment, before this has been proved, will lead to fatal delay in many cases of malignant disease, that could have been cured by early radical operation.

The Present Limitations of Radiotherapy.—It should be clearly understood that this method is still in an experimental stage; that the beneficial results are confined to superficial lesions, and that sufficient time has not yet elapsed to prove that no recurrence or metastases will take place in benefited cases. Its application should be reserved for non-operable and recurrent lesions and primary superficial growths when the diagnosis is in doubt, or when the more benign character of the lesion makes it permissible to seek a more cosmetic result than would be possible by surgical operation.

The Protection of the Parts.—Dr. L. A. Weigel of Rochester has found that sheet lead answers perfectly for this purpose. The area operated upon can thus be limited, so that the tanning is limited absolutely to the size and shape of the opening. While protecting the parts immediately surrounding the area of irradiation, however, unexpected and undesirable effects in remote parts may be obtained. In two cases tanning of the face had occurred, and in still another case there was loss of hair and eyebrows.

Difference in Reaction in Different Individuals.—Until detail of technic is established it is better to begin with small doses, *i.e.*, good distance and short exposure—12 inches for 10 minutes. Scar tissue reacts badly and anemia and other conditions of malnutrition increase the liability to unfavorable reaction. Acute reaction in some growths is followed by retrogression. A burning sensation is not a reliable guide to discontinue the treatment; when that occurs serious damage may already have been done. The other factor, the quality of tube, could then (as nearly as possible) be arranged to agree. This would leave the idiosyncrasy more directly to be measured by the number of times it would be necessary to repeat the exposure.

Careful Attention to Detail Required.—Dr. Charles W. Allen said that the treatment required the most careful attention to detail. In a uterine case which he had been treating he on one occasion carelessly neglected to use the screen and to paint the vagina with methylene blue, and introduced the bulb directly between the thighs. The consequence was that a burn of the thighs was produced. The patient was wearing an abdominal pad at the time, however, and the skin was left uninjured where its rubber bands passed. A mucovaginitis was also set up. In regard to measuring the X-ray, it seemed almost superfluous to talk about doing this when it was not known what the agent really was. An instance in which relief of pain was strikingly shown was that of a case of cancer of the rectum in which the patient had previously been suffering excruciatingly. If this treatment never accomplished anything more than to afford relief from pain and to inspire patients with new hope, it had already proved a great boon.

Idiosyncrasy.—Dr. Carl Beck said too much must not be asked in regard to the character and action of the Roentgen rays. No one has ever seen the bacillus of syphilis, and yet treatment of that disease is successful. He did not see how to explain the difference of reaction in different individuals except on the hypothesis of idiosyncrasy. Such idiosyncrasy might be compared to iodoform idiosyncrasy, from which about one patient in every fifty suffers. In regard to lupus it might be truthfully said that radiation is the *only* treatment for this disease to-day. Even lupus erythematosus, which had for so many years been the opprobrium of the profession, was cured by it. With regard to cancer he was still somewhat skeptical, though some results had proved very much better than he had anticipated. But in his opinion it would be extremely unwise to substitute the X-ray for the scalpel. In regard to operating upon cancer of the breast the opinion of surgeons had undergone changes from time to time. The X-ray, he believed, should not be resorted to as long as the knife could be used. It was a fact that at the present day the prognosis in malignant disease was greatly improved, for the reason that patients consulted the surgeon much earlier than was formerly the case. After the knife had been extensively used, however, it was well to resort to the X-ray, which might be of service in destroying any cancer cells that might be left. In employing it he, as a rule, preferred a soft tube, making use of the hard tube only when interior penetration was required. He did not think that any case of cure in internal cancer had as yet been reported.

Beneficial Results.—Dr. H. Beeckman Delatour said that his experience had been limited to such cases as arise in general surgical practice. In one case of tumor of the transverse colon, which it was impossible to remove and in which an anastomosis had been made below the growth, the X-ray treatment had proved successful. After eight months the patient was in apparently perfect health. In all his X-ray cases the relief of pain had been marked and lasting.

The Removal of Fetor.—Dr. George G. Hopkins said that there was one point which had not been brought out in the paper or discussion, and that was the rapidity with which the foul odor of cancerous disease is removed by the X-ray treatment. In a patient, the half of whose right cheek was involved, the fetor was so great that the smell pervaded the whole house; after three exposures this was entirely done away with and under the treatment the malignant growth became reduced from six to four inches in size. In one case of chronic eczema a cure was effected after eighteen treatments. In another patient, a physician, who had had eczema on the back of the hands for a number of years, only five treatments were required for a cure.

Not Equal to Surgical Operation.—Dr. Alexander B. Johnson said that all were agreed that the X-ray, or whatever the agent might be that was employed under that name, was capable of producing certain definite effects. He had already seen the ill-effects which the reports of its success had produced in the minds of many individuals. In a number of instances patients with properly operable carcinomata had come to him insisting that they be treated by means of the X-ray and had been turned away because they would not consent to a surgical operation. At the same time, he was willing to admit that the time might come when this condition of affairs would no longer exist. The cases of cancer in which he had employed the X-ray were inoperable ones. On this account his results were perhaps less favorable than those of some others. The statement had been made that while growths were under this treatment secondary growths do not take place. He had had one case, however, in which the nodules at the original seat of disease had disappeared, but during the last three months at least fifty nodules had made their appearance in other parts. In a case of carcinoma of the jaw also, the growth was apparently very much improved, yet the patient had been attacked by a secondary carcinoma of the neck, and it seemed to him that it developed much more rapidly than it would have done if the case had been left alone.